KUNDENDIENST

ITT Graetz

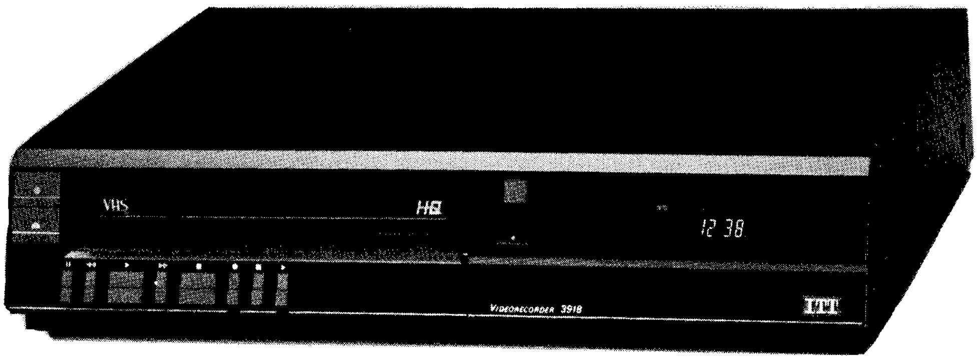
SERVICE

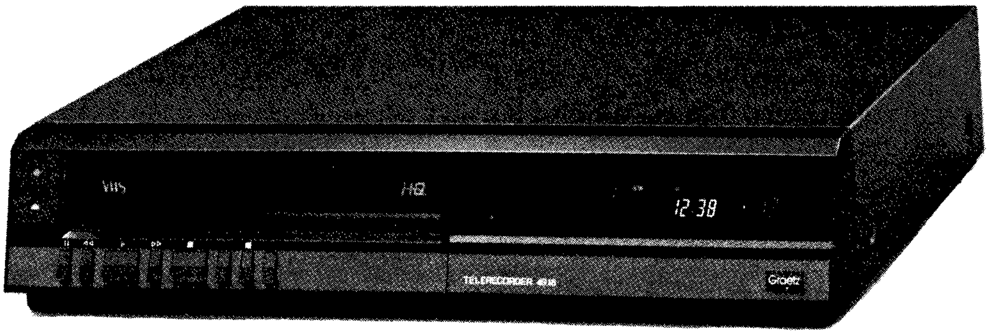
MANUAL

Ersatzteile-Listen
Spare Parts Lists
Explosions-Darstellungen
Exploded-View Diagrams
Teil 3 / Part 3

VR
136-3
1987

ITT VIDEORECORDER 3918 Oscar
Graetz TELERECORDER 4918 Oscar





Dieses Manual gilt in Verbindung mit folgenden Manualen:

VR 136-1	Schaltbilder – Lagepläne Bestell-Nr. 6611 80 29
VR 136-2	Einstellanweisung der Mechanik und Elektronik Bestell-Nr. 6611 80 30
VR 136-3	Ersatzteile-Listen Bestell-Nr. 6611 80 62

This manual is to be used in conjunction with the following Service Manuals:

VR 136-1	Schematic Diagrams – Circuit Boards Part. No. 6611 80 29
VR 136-2	Mechanical and Electronic Adjustments Part. No. 6611 80 30
VR 136-3	Spare Parts Lists Part. No. 6611 80 62

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Elektrische Ersatzteile-Liste
Electrical Spare Parts List

VR 3918 Oscar
TR 4918 Oscar

Allgemeine Bauteile
General Parts

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
P 25	Ant.-Verstärker Mix Booster Modulator RF Converter	5826 05 08
P 39	Audio/Synchronkopf A/CTL Head	4335 92 90
P 1	Cassettenschacht Cassette Housing	8318 52 17
P 48	Tuner	5823 07 37
P 27, Chassis 2	Kopftrommel Head Drum	4335 92 88
P 10	Netztrafo Power Transformer	4511 33 85
P 27, TN-1	ZF-Baustein ZF Modul	5825 04 02
	Netzkabel Power Cord	4147 04 92
	IFB-Sender IFB transmitter	5652 21 36

VR 3918 UK

Allgemeine Bauteile
General Parts

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
P 25	Ant.-Verstärker Mix Booster Modulator RF Converter	5826 05 06
P 39	Audio/Synchronkopf A/CTL Head	4335 92 90
P 1	Cassettenschacht Cassette Housing	8318 52 17
	Tuner	5823 07 38
P 27, Chassis 2	Kopftrommel Head Drum	4335 92 88
P 10	Netztrafo Power Transformer	4511 33 86
P 27, TN-1	ZF-Baustein ZF Modul	5825 83 19
	Netzkabel Power Cord	4147 04 92
	IFB-Sender IFB transmitter	5652 21 36

Zubehör Accessory — VR 3918 Oscar/VR 3918 UK

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
	Bedienungsanleitung Instruction Book	6612 40 57
	Instruction Book (UK-Version)	6612 40 58
	Verpackungskarton Packing Case	6162 61 54
	Verpackungspolster Vorne Cushion Ass'y front	6172 07 75
	Verpackungspolster Hinten Cushion Ass'y behind	6172 07 76
	Antennenkabel Aerial Cable	4131 41 98

Zubehör Accessory — TR 4918 Oscar

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
	Bedienungsanleitung Instruction Book	6612 40 59
	Verpackungskarton Packing Case	6162 41 55
	Verpackungspolster Vorne Cushion Ass'y front	6172 07 75
	Verpackungspolster Hinten Cushion Ass'y behind	6172 07 76
	Antennenkabel Aerial Cable	4131 41 98

VD-1 Video-Platte
VD-1 Video Board

Integrierte Schaltungen/Integrated Circuits

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
IC 1001	LA 7223	3771 54 18
IC 1101	AN 3230 K	3771 54 33
IC 1111	MN 3811	3771 54 19
IC 1201	TA 8632 N	3771 54 20
IC 1301	LA 7311	3771 54 21
IC 2001	LA 7096	3771 54 22

Elektrische Ersatzteile-Liste
Electrical Spare Parts List

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
Transistoren/Transistors		
B 1101	2 SA 1345	3614 52 80
B 1201	2 SC 3399	3614 52 79
Q 1001	2 SA 608 F	3614 52 81
Q 1002	2 SC 536 E	3614 49 47
Q 1003, 1021	2 SA 608 E	3614 49 42
Q 1021	2 SA 608 F	3614 52 81
Q 1105	2 SA 984 K,F	3614 55 12
Q 1122, 1202	2 SA 608 E	3614 49 42
Q 1203	2 SC 2839 E	3614 43 06
Q 1204-1206	2 SC 536 E	3614 49 47
Q 1207	2 SA 608 E	3614 49 42
Q 1208	2 SC 536 E	3614 49 47
Q 1221	2 SA 608 E	3614 49 42
Q 2001, 2002	2 SC 536 G	3614 37 32
Q 2071	2 SB 985 S	3614 52 96
Q 2072	2 SA 984 K,F	3614 55 12
Q 2073	2 SC 536 G	3614 37 32
Q 2073	2 SC 536 F-AUD	3614 43 09
Q 2074	2 SD 400 E	3614 49 44
Q 2075-2077	2 SA 984 K,F	3614 55 12
Q 2076, 2077	2 SA 984	3614 48 80
Q 2078, 2079	2 SC 536 E	3614 49 47
Q 6080	2 SK 68 A	3614 38 27
Dioden/Diodes		
D 1001-1031	1 SS 133	3656 22 30
D 1032	GZS 9,1 Y	3656 30 52
D 1102-1203	1 SS 133	3656 22 30
D 2001-2071	1 SS 133	3656 22 30
D 2072, 2073	GZA 5,1 Y	3656 27 72
D 6080	GZS 5,1 Y	3656 30 53
D 6083	1SS 133	3656 22 30
Elkos/Electrolytic Capacitors		
C 1001	470 uF 6,3 V MIN	3422 87 10
C 1002	100 uF 16 V	3422 28 29
C 1005	47 uF 16 V MIN	3422 85 42
C 1008	22 uF 6,3 V	3422 99 27
C 1034	100 uF 16 V	3422 28 29
C 1035	47 uF 10 V MIN	3422 85 31
C 1036	47 uF 10 V MIN	3422 85 31
C 1038, 1040	10 uF 16 V MIN	3422 85 30
C 1041, 1042	1 uF 50 V MIN	3422 86 94
C 1051	100 uF 16 V	3422 28 29
C 1105	4,7 uF 25 V MIN	3422 85 32
C 1106	47 uF 10 V MIN	3422 85 31
C 1107	4,7 uF 25 V MIN	3422 85 32
C 1107	1 uF 50 V MIN	3422 86 94
C 1108	4,7 uF 50 V	3422 63 25
C 1115	2,2 uF 50 V MIN	3422 85 09
C 1123, 1124	3,3 uF 50 V MIN	3422 85 48
C 1125	47 uF 6,3 V MIN	3422 85 59
C 1127, 1130	4,7 uF 25 V MIN	3422 85 32
C 1131	0,47 uF 50 V MIN	3422 85 56
C 1140, 1143	4,7 uF 25 V MIN	3422 85 32
C 1154	47 uF 6,3 V MIN	3422 85 59
C 1155	330 uF 10 V	3422 24 63
C 1163	47 uF 10 V MIN	3422 85 31
C 1178	47 uF 6,3 V MIN	3422 85 59
C 1202-1224	1 uF 50 V MIN	3422 86 94
C 1242, 1244	47 uF 6,3 V MIN	3422 85 59
C 1253	1 uF 50 V MIN	3422 86 94
C 1303	47 uF 16 V MIN	3422 85 42
C 1306, 1307	3,3 uF 25 V MIN	3422 85 41
C 1308	4,7 uF 25 V MIN	3422 85 32
C 1309	100 uF 16 V	3422 28 29
C 2001, 2002	47 uF 16 V MIN	3422 85 42
C 2003	1 uF 50 V MIN	3422 86 94
C 2006	0,47 uF 50 V MIN	3422 85 56
C 2009	47 uF 10 V MIN	3422 85 31
C 2010	10 uF 16 V MIN	3422 85 30
C 2011	47 uF 10 V MIN	3422 85 31
C 2012, 2014	1 uF 50 V MIN	3422 86 94
C 2015	4,7 uF 25 V MIN	3422 85 32
C 2016	10 uF 16 V MIN	3422 85 30
C 2017	4,7 uF 25 V MIN	3422 85 32
C 2020	100 uF 16 V	3422 28 29

Elektrische Ersatzteile-Liste
Electrical Spare Parts List

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
C 2071	22 uF 10 V MIN	3422 85 45
C 2072	1 uF 50 V MIN	3422 86 94
C 2073	47 uF 6,3 V MIN	3422 85 59
C 6080	4,7 uF 25 V MIN	3422 85 32
C 6081	0,1 uF 50 V MIN	3422 85 55
C 6082	1 uF 50 V MIN	3422 86 94
C 6083	4,7 uF 25 V MIN	3422 85 32
C 6084	0,47 uF 50 V MIN	3422 85 56
C 6085	4,7 uF 25 V MIN	3422 85 32
C 6086	100 uF 6,3 V MIN	3422 85 26
Trimmer-Widerstände/Trimmer Resistors		
VR 1001	500 Ohm	3111 89 13
VR 1002	20 kOhm	3111 87 33
VR 1003,1004	10 kOhm	3111 87 23
VR 1005-1007	20 kOhm	3111 87 33
VR 1121	4,7 kOhm	3111 87 32
VR 1201	100 kOhm	3111 87 26
VR 1202	1 kOhm	3111 87 24
VR 2001	100 kOhm	3111 87 26
VR 2002	10 kOhm	3111 87 23
Spulen/Coils		
L 1001-1102		4543 19 41
L 1104		4543 21 85
L 1105		4543 21 86
L 1106		4543 19 41
L 1107		4543 21 87
L 1108		4543 21 88
L 1110		4543 21 89
L 1121		4543 19 41
L 1122		4543 22 13
L 1202		4543 21 90
L 1205		4543 21 91
L 1209		4543 21 92
L 1211, 1240		4543 19 41
L 1242		4543 21 93
L 1261		4543 19 41
L 2001		4543 19 54
L 2002		4543 21 94

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
L 2003		4543 19 38
L 2051, 2052		4543 21 95
L 2053		4543 21 96
L 2071		4543 21 97
L 6080		4543 21 98
L 6081		4543 21 99
L 6082		4543 22 04
L 6084		4543 21 97
Filter/Filters		
F 1101		4552 71 50
F 1102		4552 71 51
F 1201		4552 71 52
T 2001		4552 94 25
F 2051		4552 71 53
F 2052		4552 71 54
Allgemeine Bauteile/General Parts		
X 1201	Quarz/Crystal Block	4421 24 54
DL 1201	Verzögerungsleitung Delay Line	4342 11 71
	Sicherung 0,315 A Fuse 0,315 A	4375 20 14
	Abdeckung für Buchsen Cover for sockets	8681 39 87

VP-1 Video Vorverstärker
VP-1 Video Pre Amp.

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
Integrierte Schaltungen/Integrated Circuits		
IC 1601	AN 3331 K	3771 54 17
Transistoren/Transistors		
Q 1601, 1602	2 SC 2814 F 4-TB	3614 43 34
Spulen/Coils		
L 1601		4543 22 05
L 1602		4543 20 69
L 1603		4543 22 06
L 1604		4543 19 96
L 1605		4543 22 05

Elektrische Ersatzteile-Liste
Electrical Spare Parts List

Elkos/Electrolytic Capacitors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
C 1609	47 uF 6,3 V	3441 88 01
C 1618	47 uF 16 V MIN	3422 85 42

SY-1 Ablaufsteuer-Platte
SY-1 System Cont. Board

Integrierte Schaltungen/Integrated Circuits

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
IC 3001	LC 6568 H-3350	3771 54 23
IC 3002	LA 6393 D	3771 54 24
IC 3003	LB 1641	3771 54 25
IC 4001	LC 7412-8017	3771 54 26
IC 4002	LA 7116	3771 54 27
IC 4003	BA 226 F	3771 46 71

Transistoren/Transistors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
B 3001	DTC 114 ES	3614 52 31
B 3001	2 SC 3402	3614 52 18
B 3002	2 SC 3399	3614 52 79
Q 3001, 3002	2 SC 536 E	3614 49 47
Q 4001	2 SA 984	3614 48 80
Q 4002	2 SC 945 Q	3614 37 45
B 4001, 4002	2 SC 3399	3614 52 79

Dioden/Diodes

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
D 3001, 3002	1 SS 133	3656 22 30
D 3004, 3005	GMA 01	3656 27 70
D 3010	GZS 9,1 Z-BT	3656 30 61
D 3011	GZS 6,8 Y	3656 30 62
D 4001-4011	1 SS 133	3656 22 30

Elkos/Electrolytic Capacitors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
C 3006	10 uF 16 V MIN	3422 85 30
C 3009	4,7 uF 25 V	3422 08 13
C 3010, 3011	1 uF 50 V MIN	3422 86 94
C 3012	100 uF 6,3 V MIN	3422 85 26
C 3017, 3020	2,2 uF 50 V MIN	3422 85 09
C 4003	10 uF 16 V MIN	3422 85 30
C 4005	47 uF 6,3 V	3441 88 01
C 4007	10 uF 25 V MIN	3422 86 42
C 4016, 4017	1 uF 50 V MIN	3422 86 94
C 4019	33 uF 6,3 V MIN	3422 86 76
C 4020	47 uF 6,3 V MIN	3422 85 59
C 4023	1 uF 50 V MIN	3422 86 94
C 4031	10 uF 16 V MIN	3422 85 30
C 4033	47 uF 10 V MIN	3422 85 31
C 4035	10 uF 16 V MIN	3422 85 30
C 4037	47 uF 16 V MIN	3422 85 42
C 4038	10 uF 25 V MIN	3422 86 42
C 4039	10 uF 16 V MIN	3422 85 30
C 4041	3,3 uF 50 V MIN	3422 85 48

Spulen/Coils

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
L 3001		4543 19 41

Trimmer-Widerstände/Trimmer Resistors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
VR 4001-4003	200 kOhm	3111 87 27
VR 4004	100 kOhm	3111 87 31

Allgemeine Bauteile/General Parts

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
R 3001	⚠ Sich-Wid Safety Resistor	3151 82 82
S 3001	Schalter Switch	4112 96 67
X 3001	Quarz/Crystal Block	4421 24 34

PW-1 Netzteil
PW-1 Power Supply

Integrierte Schaltungen/Integrated Circuits

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
IC 5001	STK 7226	3771 54 28

Transistoren/Transistors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
Q 5002	2 SA 984 K,F	3614 55 12
Q 5003	2 SB 560	3614 48 78
Q 5004	2 SC 3807	3614 43 35
Q 5005	2 SC 536 E	3614 49 47
Q 5005	2 SC 536 F-AUD	3614 43 09

Dioden/Diodes

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
D 5001-5004	12 C-KC 6	3656 30 54
D 5005, 5006	DSK 10 C	3656 30 55
D 5006	ERA 15-02 A	3656 30 56
D 5007	DSK 10 C	3656 30 55
D 5009	GZB 16 C	3656 30 57

Elektrische Ersatzteile-Liste
Electrical Spare Parts List

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
D 5010	GMA 01	3656 27 70
D 5011	GZS 12 X	3656 30 58
D 5012	GZS 33X-BT	3656 30 59
D 5013	GMA 01	3656 27 70
D 5014	GZS 5,1 Y	3656 30 53
D 5015	GMA 01	3656 27 70

Elkos/Electrolytic Capacitors

C 5001	2200 uF 50 V	3422 37 04
C 5002	100 uF 100 V	3422 78 36
C 5003	47 uF 100 V	3422 09 45
C 5004	1 uF 50 V MIN	3422 36 94
C 5005, 5006	100 uF 10 V MIN	3422 35 38
C 5007	1 uF 50 V MIN	3422 36 94
C 5008	22oo uF 16 V	3422 99 20
C 5009	47 uF 16 V MIN	3422 85 42
C 5011	1 uF 50 V MIN	3422 36 94
C 5012	10 uF 50 V	3422 36 19

Spulen/Coils

L 5001		4543 22 07
L 5002, 5003		4543 22 08
L 5101		4552 71 55

Allgemeine Bauteile/General Parts

R 5001	⚠ Sich.-Wid Safety Resistors	3151 82 83
R 5008	⚠ 47 Ohm	3151 82 58
F 5001	⚠ Sicherung 0,8 AT Fuse 0,8 AT	4375 10 15
F 5101	⚠ Sicherung 0,4 AT Fuse 0,4 AT	4375 10 12

TN-1 Tuner-Platte
TN-1 Tuner Board

Integrierte Schaltungen/Integrated Circuits

IC 6001	LA 7530 N	3771 54 29

Transistoren/Transistors

Q 6004	2 SC 1740 S	3614 49 90

Dioden/Diodes

D 6001	1 SS 133	3656 22 30

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.

Elkos/Electrolytic Capacitors

C 6009	1 uF 50 V MIN	3422 36 94
C 6012	4,7 uF 35 V	3422 09 65
C 6014	0,1 uF 50 V	3422 09 37
C 6016	47 uF 16 V MIN	3422 85 42
C 6024	10 uF 16 V MIN	3422 85 30
C 5025	4,7 uF 35 V	3422 09 65
C 6025	10 uF 16 V MIN	3422 85 30

Spulen/Coils

L 6001		4543 22 09
L 6002	UK-Version	4543 22 09
L 6002		4543 22 10
L 6003	UK-Version	4543 20 67
L 6003		4543 22 11
L 6004		4543 20 68

Filter/Filters

T 6001		4552 71 56
T 6002		4552 71 57
T 6003		4552 71 58
F 6001		4552 71 59
F 6001	UK-Version	4552 71 63
F 6002	UK-Version	4552 94 80
F 6002		4552 71 60
F 6003	UK-Version	4552 71 64
F 6003		4552 71 61
F 6004	UK-Version	4552 94 81
F 6004		4552 71 62

Allgemeine Bauteile/General Parts

R 6022	⚠ Sicherheits.-Wid Safety Resistors	3151 82 84

TM-1 Tuning-Platte
TM-1 Tuning Board

Integrierte Schaltungen/Integrated Circuits

IC 7101	LA 7212	3771 50 30
IC 7102	LA 7910	3771 46 84
IC 7103	L 5631	3771 50 50

Elektrische Ersatzteile-Liste
Electrical Spare Parts List

Transistoren/Transistors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
Q 7101	2 SC 536 E	3614 49 47
Q 7101	2 SC 536 F	3614 39 69
Q 7101	2 SC 536 E	3614 49 47
Q 7102	2 SC 383 TM	3614 52 92
Q 7103	2 SB 985 S	3614 52 96

Dioden/Diodes

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
D 7101	1 SS 133	3656 22 30
D 7103	GZS 15 Y	3656 30 60

Elkos/Electrolytic Capacitors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
C 7102	0,47 uF 50 V MIN	3422 85 56
C 7103	1 uF 50 V MIN	3422 86 94
C 7107, 7110	100 uF 16 V	3422 28 29
C 7115	22 uF 50 V	3422 87 98

Spulen/Coils

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
L 7101		4543 21 98
L 7102		4543 22 12

Filter/Filters

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
X 7101		4552 94 33

TM-4 Kanalwahl & Abstimmplatte
TM-4 Channel Select & Tuning CTL Board

Integrierte Schaltungen/Integrated Circuits

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
IC 7401	M 50754-586 SP	3771 54 30
IC 7402	M 58659 P	3771 54 31
IC 7403	MN 1280 L	3771 50 32

Transistoren/Transistors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
B 7403	DTA 144 F	3614 48 95

Dioden/Diodes

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
D 7401	LED	3681 17 19
D 7402	GMA 01	3656 27 70
D 7403-7416	GMA 01	3656 27 70
D 7417	DS 442 X	3656 27 86
D 7418-7422	GMA 01	3656 27 70
D 7423	DS 442 X	3656 27 86
D 7424, 7425	1SS 133	3656 28 20

Elkos/Electrolytic Capacitors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
C 7401	0,47 uF 50 V MIN	3422 85 56
C 7402	33 uF 10 V MIN	3422 86 90
C 7414	0,047 uF 5,5 V	3422 87 72
C 7417	33 uF 10 V MIN	3422 86 90

Schalter/Switches

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
S 7401-7423		4112 95 87
S 7424		4112 96 68

Wid.-Netzwerke/Resistor Arrays

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
B 7401		3722 26 08
B 7402		3722 25 75

Allgemeine Bauteile/General Parts

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
	LED-Halter LED Holder	8681 39 89
	Display-Halter Display holder	8681 39 88
A 7401	Display	3686 11 02
A 7402	IR-Empfänger-Modul IR Receiver modul	6913 88 44
CT 7401	Trimmer	3412 90 41
X 7401	Quarz/Quartz	4421 24 36
X 7402	Quarz/Quartz	4421 24 35

TM-5 Tastatur-Platte
TM-5 Key Operation

Schalter/Switches

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
S 7001, 7002		4112 95 92
S 7003-7010		4112 95 87

Fernbedienungs-Sender
IFR Transmitter

Integrierte Schaltungen/Integrated Circuits

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
IC 1	uPD 1943 G	3771 54 32

Transistoren/Transistors

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
Q 1	2 SC 2673 Q	3614 36 48

Elektrische Ersatzteile-Liste
Electrical Spare Parts List

Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.	Positions-Nr. Reference-No. Numéro de pos.	Gegenstand Description Description	Bestell-Nr. Part-No. No. de comm.
Dioden/Diodes					
D 1	SLR 932 A	3683 10 78			
D 2-4	1 SS 133	3656 22 30			
Allgemeine Bauteile/General Parts					
X 1	Quarz/Quartz	4421 24 55			

Mechanische Ersatzteile-Liste
Mechanical Spare Parts List

Gehäuse Cabinet Ass'y
VR 3918 Oscar

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 6	8318 52 12
P 8	4147 04 92
P 10	4511 33 85
P 12	8681 39 66
P 14	6134 48 48
P 19	8681 35 01
P 22	6913 22 38
P 23	6134 48 50
P 25	5826 05 08
P 26	7358 29 67
P 29	8318 52 16
P 30	8318 52 14
P 32	6913 22 33
P 34	6134 48 47
P 35	6418 36 34
P 36	6913 22 37
P 37	8223 21 36
P 43	6318 41 96
P 44	6318 41 97
P 45	6318 41 98
P 46	8681 39 68
P 48	5823 07 37

Gehäuse Cabinet Ass'y
VR 3918 UK

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 6	8318 52 12
P 8	4147 04 92
P 10	4511 33 86
P 12	8681 39 66
P 14	6134 48 48
P 19	8681 35 01
P 25	5826 05 06
P 26	7358 29 67
P 27	5825 88 19
P 29	8318 52 16
P 30	8318 52 14
P 34	6134 48 47
P 35	6418 36 33
P 36	6913 22 37
P 37	8223 21 36
P 43	6318 41 96
P 44	6318 41 97
P 45	6318 42 04
P 46	8681 39 90

Gehäuse Cabinet Ass'y
TR 4918 Oscar

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 6	8318 52 12
P 8	4147 04 92
P 10	4511 33 85
P 12	8681 39 66
P 14	6134 48 54
P 19	8681 35 01
P 22	6913 22 38
P 23	6134 48 50
P 25	5826 05 08
P 26	7358 29 67
P 29	8318 52 16
P 30	8318 52 14
P 32	6913 22 33
P 34	6134 48 55
P 35	6418 36 39
P 36	6913 22 37
P 37	8223 21 36
P 43	6318 42 03
P 44	6318 42 02
P 45	6318 36 38
P 46	8681 39 68
P 48	5823 07 37

Chassis 1

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 1	8318 52 17
P 2	7358 29 68
P 3	7525 11 37
P 4	3656 30 50
P 5	4188 04 79
P 6	7358 29 69
P 7	7525 11 38
P 8	7525 11 39
P 9	7525 11 40
P 10	4188 04 82
P 11	8681 39 69
P 13	8681 39 70
P 14	7358 29 70
P 15	7358 29 71
P 17	6134 48 52
P 18	4188 04 80
P 21	8318 52 18
P 22	7358 29 72
P 23	7726 05 92
P 24	8318 52 19
P 26	7726 05 93
P 27	7548 42 16
P 28	8318 52 20
P 30	7726 05 94
P 31	7548 42 17
P 32	8681 39 71
P 33	7726 05 95
P 34	7726 05 96
P 35	7358 29 73
P 36	7525 11 41
P 37	7525 11 42
P 38	6253 41 83
P 39	7726 05 85
P 40	7358 29 74
P 41	8211 46 16
P 42	8681 39 72
P 43	8681 39 73
P 44	6253 41 84

Mechanische Ersatzteile-Liste
Mechanical Spare Parts List

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 45	7358 29 75
P 46	8681 39 74
P 47	7358 29 76
P 48	8211 46 17
P 49	8681 39 75
P 50	7618 42 57
P 53	8318 52 21

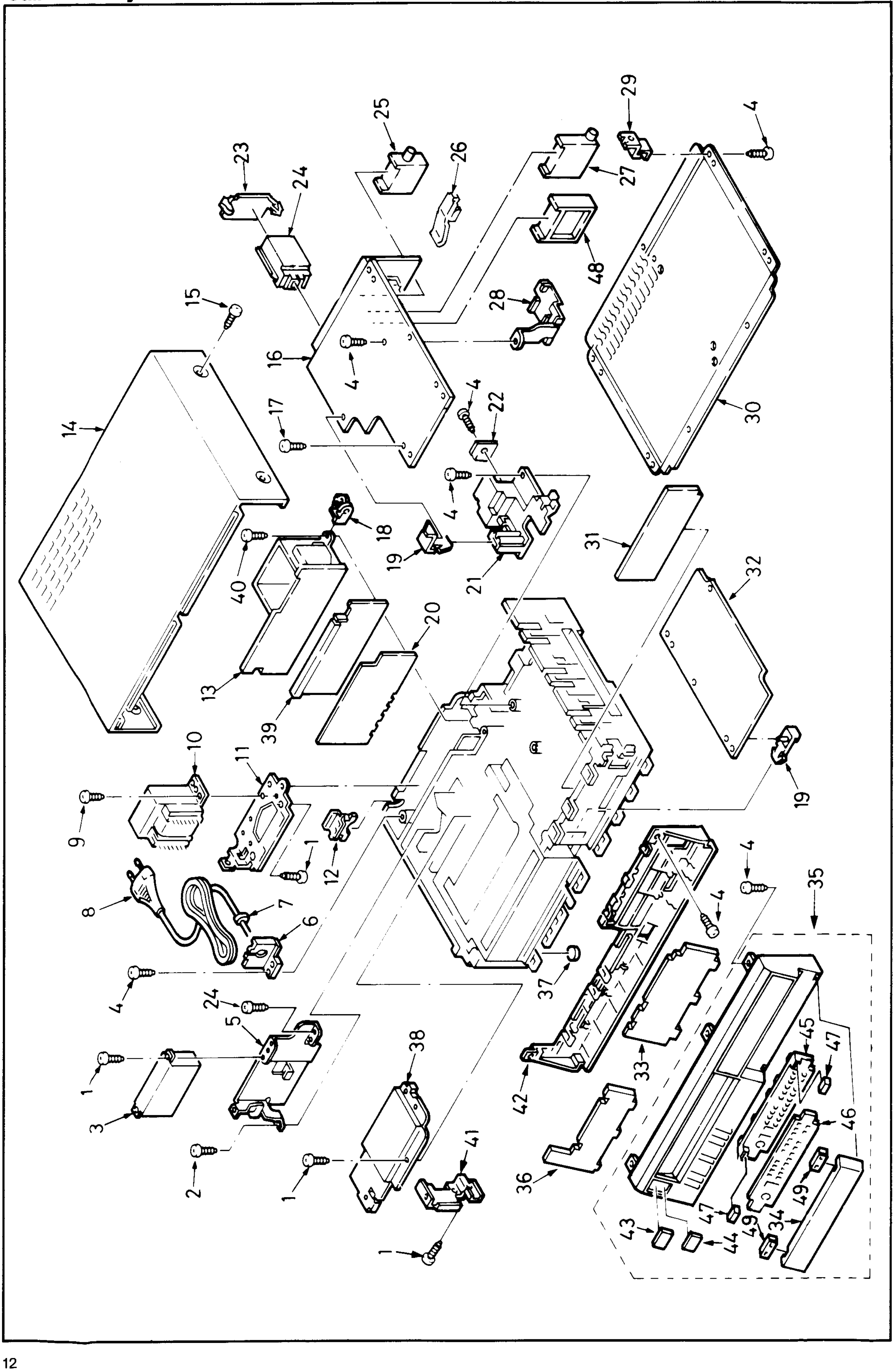
Chassis 2

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 1	8318 52 22
P 2	8318 52 23
P 3	8318 52 24
P 5	3681 17 18
P 6	8681 39 76
P 8	7711 01 77
P 9	8681 35 44
P 11	7726 05 97
P 12	7358 29 77
P 14	8681 39 77
P 16	6948 01 66
P 17	4337 91 63
P 19	4432 92 73
P 20	7358 29 78
P 22	8318 52 25
P 24	8318 52 26
P 27	4335 92 88
P 28	4335 92 89
P 29	8318 52 27
P 30	8318 52 28
P 32	6913 22 41
P 33	8318 52 29
P 36	8318 52 30
P 37	7711 01 76
P 39	4335 92 90
P 40	7358 29 79
P 42	8318 52 31
P 44	3656 30 51
P 46	8681 39 78
P 47	7358 29 77
P 48	7726 05 98
P 49	7726 05 85
P 50	8318 52 32
P 51	7358 29 80
P 52	7358 29 81
P 53	7726 05 99
P 55	7538 33 68
P 57	4543 21 84
P 58	4432 92 74
P 61	8318 52 33
P 62	7358 29 82
P 63	7525 11 43
P 64	7525 11 44
P 65	7358 29 83
P 66	8318 52 34
P 68	8868 07 12
P 69	7726 06 01

Chassis 3

Positions-Nr. Reference-No. Numéro de position	Bestell-Nr. Part-No. Numéro de commande
P 1	8681 39 79
P 2	7358 29 84
P 3	8681 39 80
P 4	7358 29 85
P 5	8211 46 18
P 6	8681 39 81
P 7	7358 29 86
P 8	7726 05 92
P 9	7726 05 93
P 10	7525 11 45
P 11	7726 05 85
P 15	8318 52 35
P 16	7358 29 87
P 17	7726 05 85
P 19	4432 92 73
P 20	8318 52 36
P 21	8681 39 82
P 22	8318 52 37
P 23	7726 06 04
P 24	7358 29 88
P 25	4188 04 81
P 28	7525 11 46
P 29	7525 11 47
P 30	8681 39 83
P 31	7358 29 89
P 32	7618 42 58
P 33	4432 92 75
P 35	8681 39 84
P 36	6913 22 44
P 37	8318 52 38
P 38	7525 11 48
P 39	7525 11 49
P 40	7525 11 50
P 41	7618 42 56
P 42	7525 11 51
P 44	8681 39 85
P 46	8318 52 39
P 48	8318 52 40
P 49	7525 11 52
P 51	7525 11 53
P 53	6913 22 42
P 56	7525 11 54
P 57	8318 52 41
P 58	7358 29 90
P 60	7525 11 55
P 61	7358 29 91
P 73	8681 39 86

Gehäuse
Cabinet Assy



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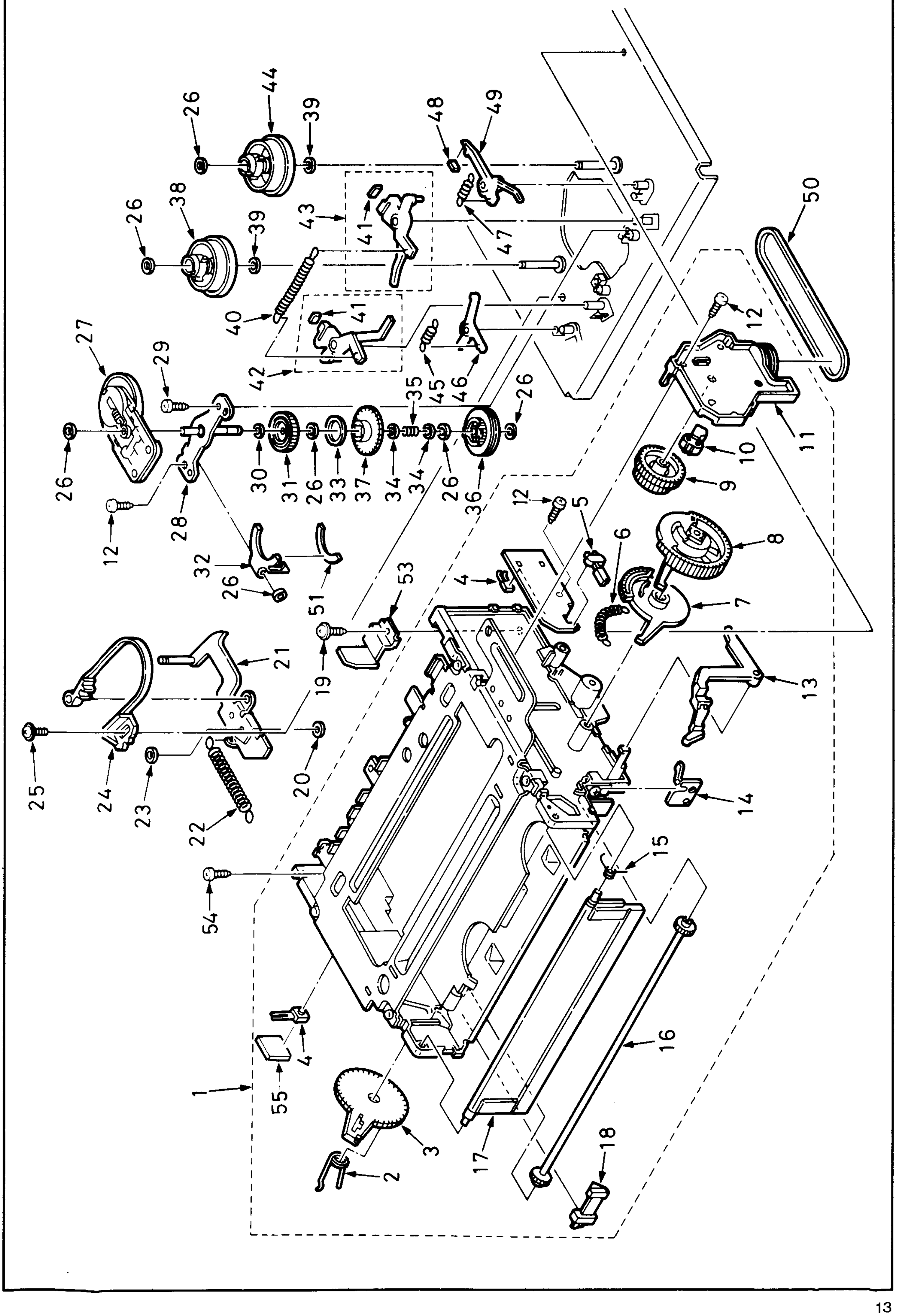
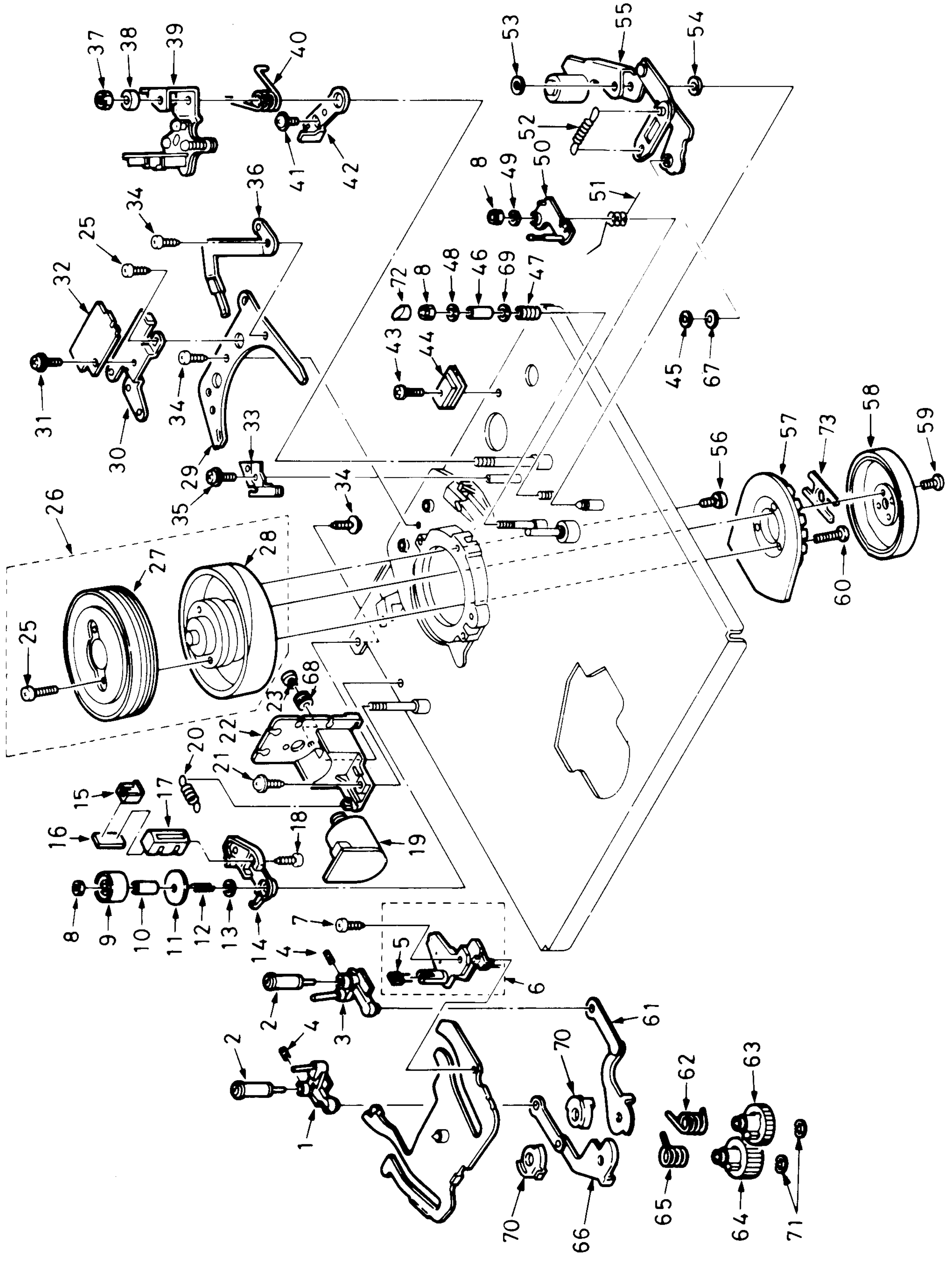
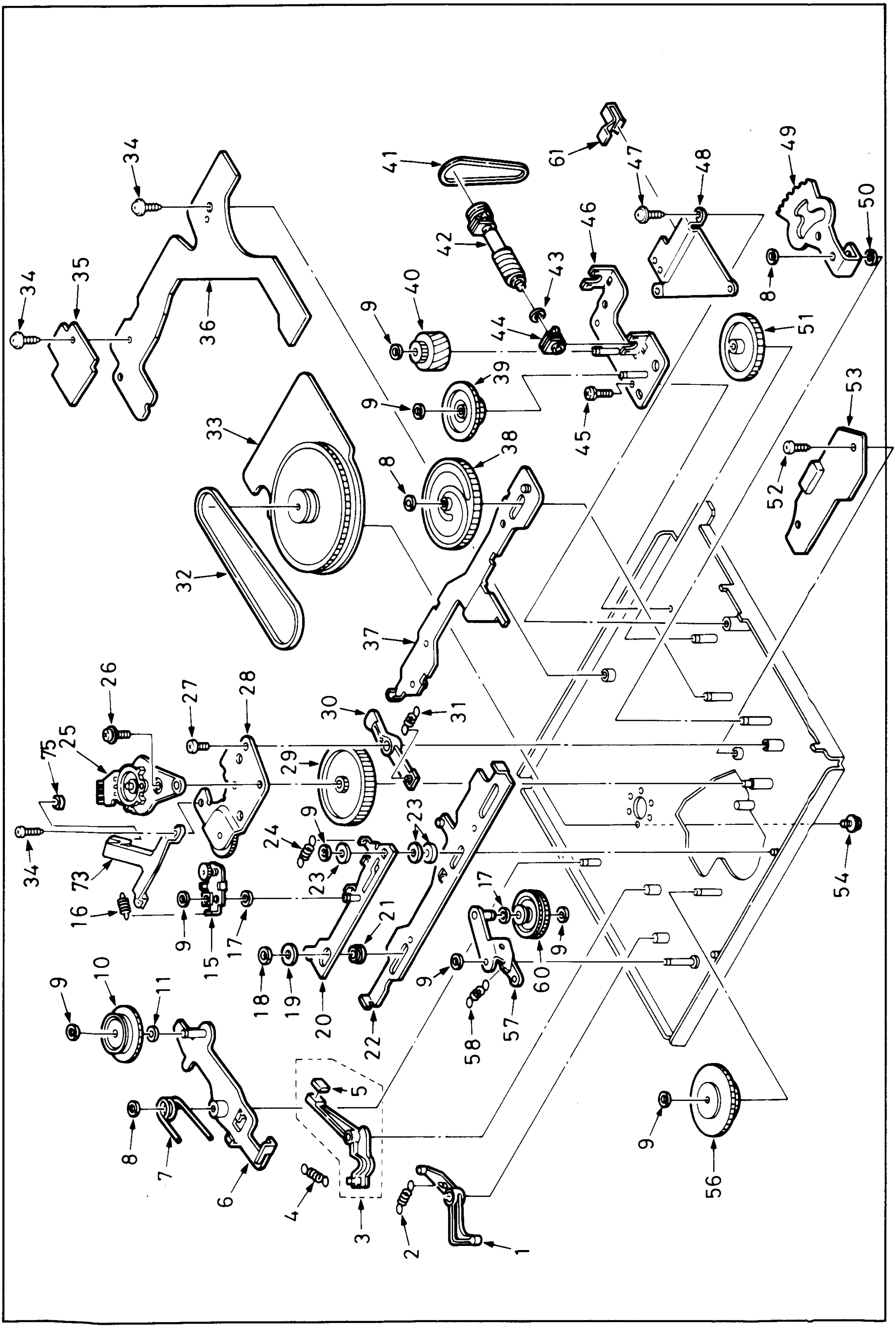
Chassis 1



Chassis 2



Chassis 3



KUNDENDIENST

ITT Graetz

SERVICE

MANUAL

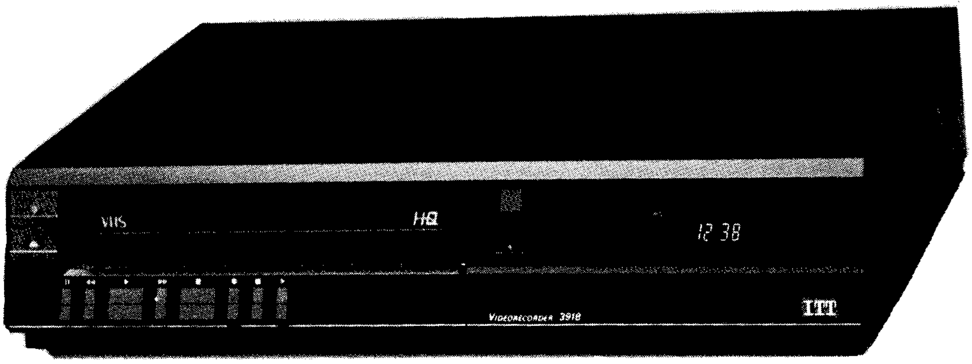
Schaltbilder – Lagepläne

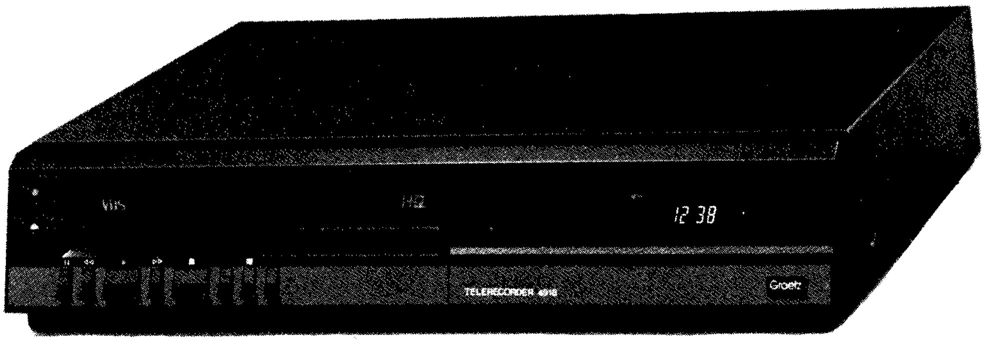
Schematic Diagrams – Circuit Boards

Teil 1 / Part 1

VR
136-1
1987

VIDEORECORDER 3918 Oscar





Für diese Geräte gelten folgende Manuale:

VR 136-1	**Schaltbilder – Lagepläne** **Bestell-Nr. 6611 80 29**
VR 136-2	**Einstellanweisung der Mechanik und Elektronik** **Bestell-Nr. 6611 80 30**
VR 136-3	**Ersatzteile-Listen** **Bestell-Nr. 6611 80 62**

For these models the following manuals apply:

VR 136-1	**Schematic Diagrams – Circuit Boards** **Part. No. 6611 80 29**
VR 136-2	**Mechanical and Electronic Adjustments** **Part. No. 6611 80 30**
VR 136-3	**Spare Parts Lists** **Part. No. 6611 80 62**

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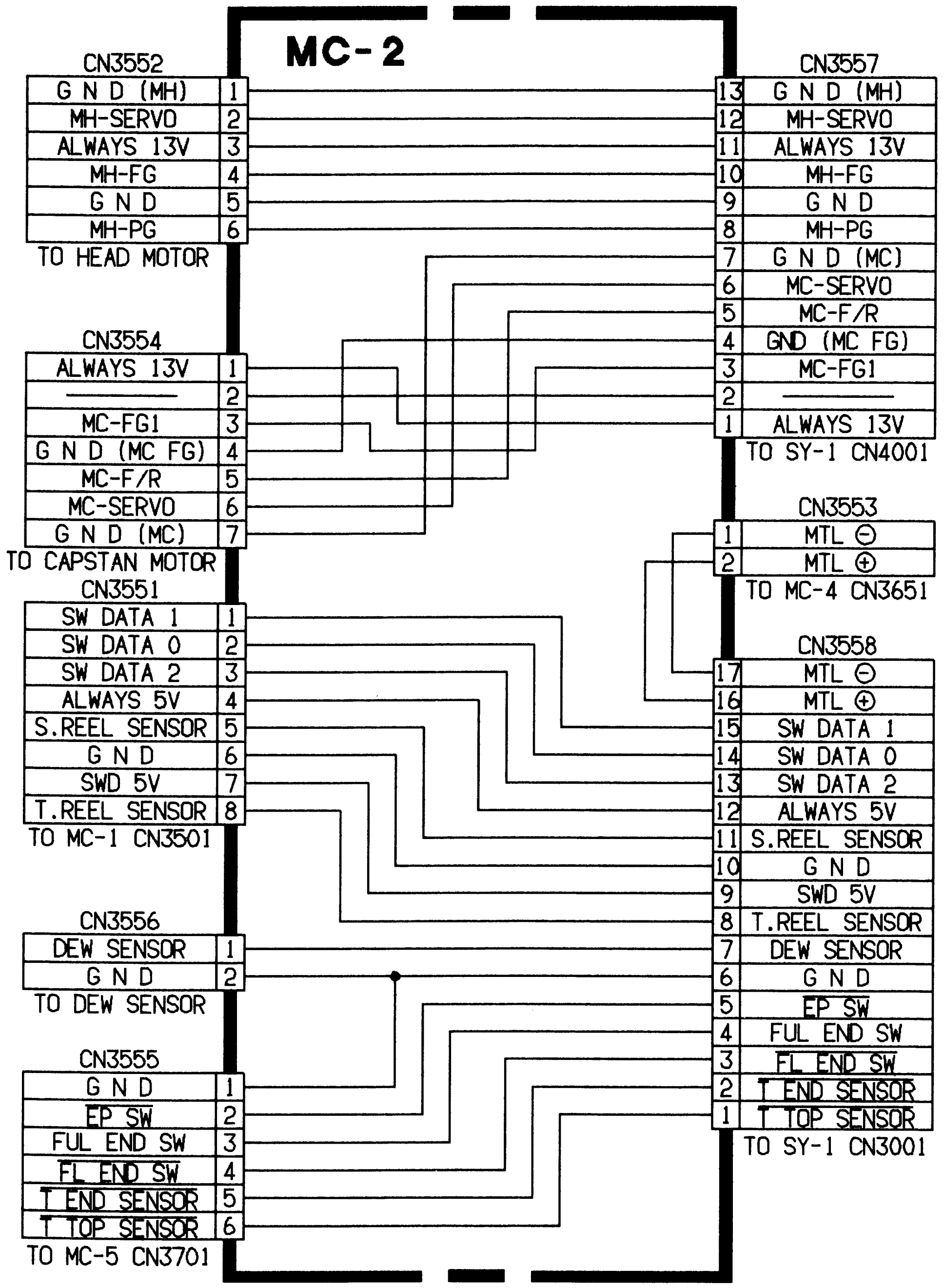
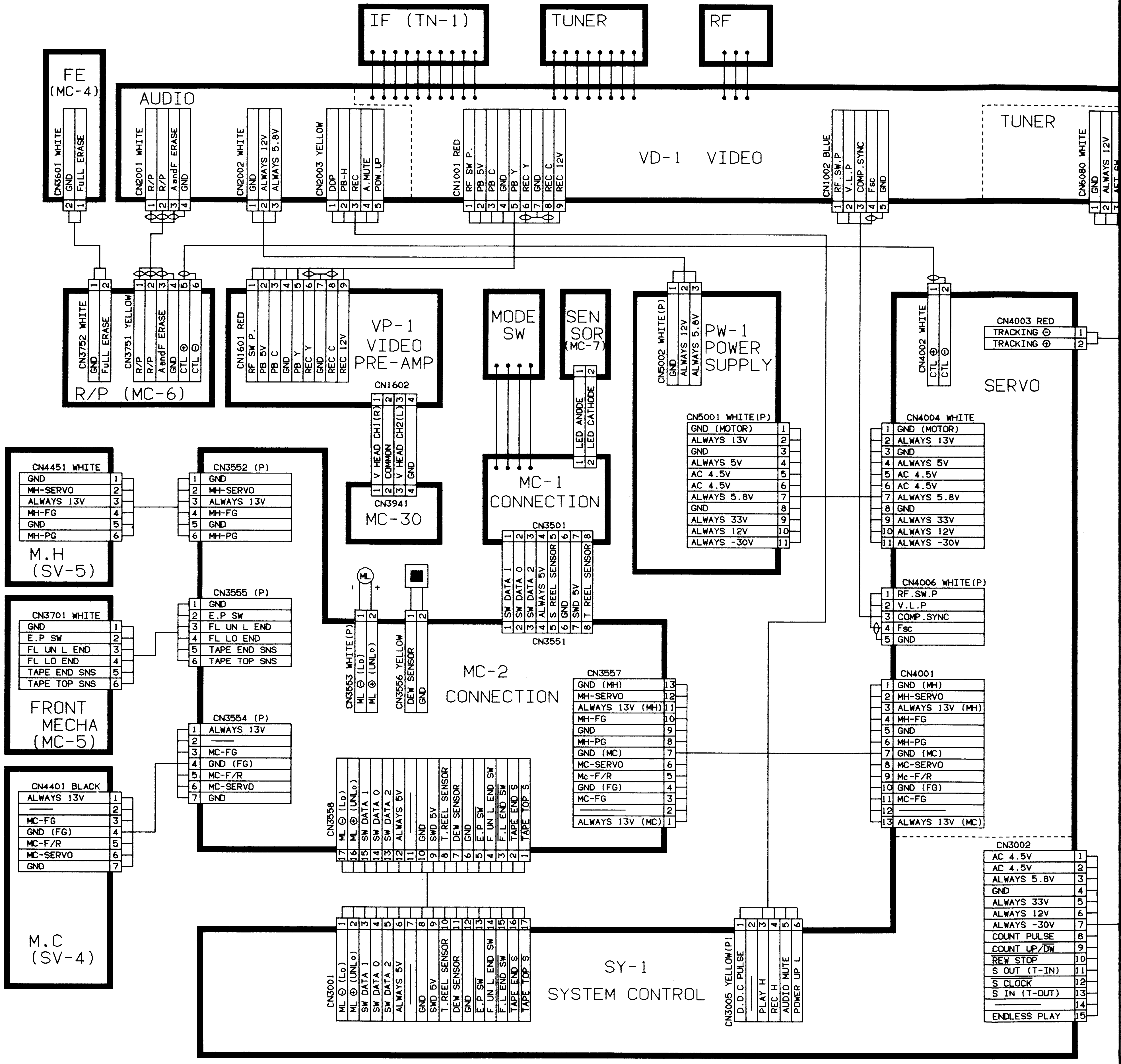
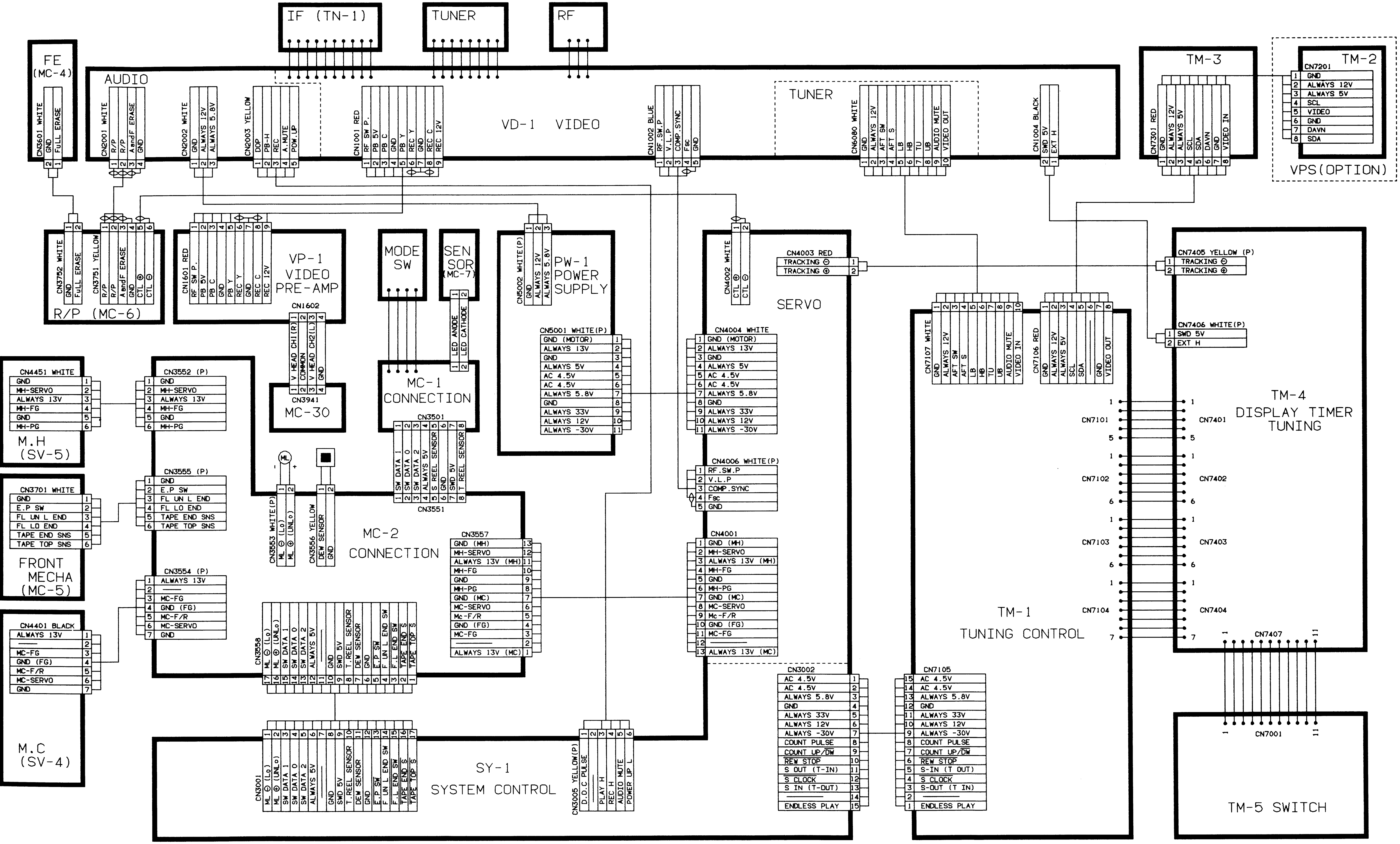
MC-2 Verbindungs-Platte
MC-2 Connection Board


MC-2
CN3552
1 G N D (MH)
2 MH-SERVO
3 ALWAYS 13V
4 MH-FG
5 G N D
6 MH-PG
TO HEAD MOTOR
CN3554
1 ALWAYS 13V
2 ————
3 MC-FG1
4 G N D (MC FG)
5 MC-F/R
6 MC-SERVO
7 G N D (MC)
TO CAPSTAN MOTOR
CN3551
1 SW DATA 1
2 SW DATA 0
3 SW DATA 2
4 ALWAYS 5V
5 S.REEL SENSOR
6 G N D
7 SWD 5V
8 T.REEL SENSOR
TO MC-1 CN3501
CN3556
1 DEW SENSOR
2 G N D
TO DEW SENSOR
CN3555
1 G N D
2 EP SW
3 FUL END SW
4 FL END SW
5 T END SENSOR
6 T TOP SENSOR
TO MC-5 CN3701
CN3557
13 G N D (MH)
12 MH-SERVO
11 ALWAYS 13V
10 MH-FG
9 G N D
8 MH-PG
7 G N D (MC)
6 MC-SERVO
5 MC-F/R
4 GND (MC FG)
3 MC-FG1
2 ————
1 ALWAYS 13V
TO SY-1 CN4001
CN3553
1 MTL ⊖
2 MTL ⊕
TO MC-4 CN3651
CN3558
17 MTL ⊖
16 MTL ⊕
15 SW DATA 1
14 SW DATA 0
13 SW DATA 2
12 ALWAYS 5V
11 S.REEL SENSOR
10 G N D
9 SWD 5V
8 T.REEL SENSOR
7 DEW SENSOR
6 G N D
5 EP SW
4 FUL END SW
3 FL END SW
2 T END SENSOR
1 T TOP SENSOR
TO SY-1 CN3001


IF (TN-1)
TUNER
RF
FE (MC-4)
CN3601 WHITE
GND
FULL ERASE
AUDIO
CN2001 WHITE
R/P
R/P
AendF ERASE
GND
CN2002 WHITE
GND
ALWAYS 12V
ALWAYS 5.8V
CN2003 YELLOW
DOP
PB-H
REC
A.MUTE
POW.UP
CN1001 RED
RF SW P.
PB 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
VD-1 VIDEO
CN1002 BLUE
RF.SW.P
V.L.P
COMP.SYNC
Fsc
GND
TUNER
CN6080 WHITE
GND
ALWAYS 12V
CN3752 WHITE
GND
FULL ERASE
CN3751 YELLOW
R/P
R/P
AendF ERASE
GND
CTL ⊕
CTL ⊖
R/P (MC-6)
CN1601 RED
RF SW P.
PB 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
VP-1 VIDEO PRE-AMP
CN1602
V HEAD CH1(R)
COMMON
V HEAD CH2(L)
GND
CN3941
MC-30
MODE SW
SEN SOR (MC-7)
LED ANODE
LED CATHODE
MC-1 CONNECTION
CN3501
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
S REEL SENSOR
GND
SWD 5V
T REEL SENSOR
CN3551
CN5002 WHITE(P)
GND
ALWAYS 12V
ALWAYS 5.8V
PW-1 POWER SUPPLY
CN5001 WHITE(P)
1 GND (MOTOR)
2 ALWAYS 13V
3 GND
4 ALWAYS 5V
5 AC 4.5V
6 AC 4.5V
7 ALWAYS 5.8V
8 GND
9 ALWAYS 33V
10 ALWAYS 12V
11 ALWAYS -30V
CN4002 WHITE
CTL ⊕
CTL ⊖
CN4003 RED
1 TRACKING ⊖
2 TRACKING ⊕
SERVO
CN4004 WHITE
1 GND (MOTOR)
2 ALWAYS 13V
3 GND
4 ALWAYS 5V
5 AC 4.5V
6 AC 4.5V
7 ALWAYS 5.8V
8 GND
9 ALWAYS 33V
10 ALWAYS 12V
11 ALWAYS -30V
CN4006 WHITE(P)
1 RF.SW.P
2 V.L.P
3 COMP.SYNC
4 Fsc
5 GND
CN4001
1 GND (MH)
2 MH-SERVO
3 ALWAYS 13V (MH)
4 MH-FG
5 GND
6 MH-PG
7 GND (MC)
8 MC-SERVO
9 Mc-F/R
10 GND (FG)
11 MC-FG
12 ————
13 ALWAYS 13V (MC)
CN4451 WHITE
1 GND
2 MH-SERVO
3 ALWAYS 13V
4 MH-FG
5 GND
6 MH-PG
M.H (SV-5)
CN3552 (P)
1 GND
2 MH-SERVO
3 ALWAYS 13V
4 MH-FG
5 GND
6 MH-PG
CN3701 WHITE
1 GND
2 E.P SW
3 FL UN L END
4 FL LO END
5 TAPE END SNS
6 TAPE TOP SNS
FRONT MECHA (MC-5)
CN3555 (P)
1 GND
2 E.P SW
3 FL UN L END
4 FL LO END
5 TAPE END SNS
6 TAPE TOP SNS
CN4401 BLACK
1 ALWAYS 13V
2 ————
3 MC-FG
4 GND (FG)
5 MC-F/R
6 MC-SERVO
7 GND
M.C (SV-4)
CN3554 (P)
1 ALWAYS 13V
2 ————
3 MC-FG
4 GND (FG)
5 MC-F/R
6 MC-SERVO
7 GND
ML
CN3553 WHITE(P)
ML ⊖ (Lo)
ML ⊕ (UNLo)
CN3556 YELLOW
DEW SENSOR
GND
MC-2 CONNECTION
CN3557
13 GND (MH)
12 MH-SERVO
11 ALWAYS 13V (MH)
10 MH-FG
9 GND
8 MH-PG
7 GND (MC)
6 MC-SERVO
5 Mc-F/R
4 GND (FG)
3 MC-FG
2 ————
1 ALWAYS 13V (MC)
CN3558
17 ML ⊖ (Lo)
16 ML ⊕ (UNLo)
15 SW DATA 1
14 SW DATA 0
13 SW DATA 2
12 ALWAYS 5V
11 ————
10 GND
9 SWD 5V
8 T.REEL SENSOR
7 DEW SENSOR
6 GND
5 E.P SW
4 F UN L END SW
3 F.L END SW
2 TAPE END S
1 TAPE TOP S
CN3001
1 ML ⊖ (Lo)
2 ML ⊕ (UNLo)
3 SW DATA 1
4 SW DATA 0
5 SW DATA 2
6 ALWAYS 5V
7 ————
8 GND
9 SWD 5V
10 T.REEL SENSOR
11 DEW SENSOR
12 GND
13 E.P SW
14 F UN L END SW
15 F.L END SW
16 TAPE END S
17 TAPE TOP S
SY-1 SYSTEM CONTROL
CN3005 YELLOW(P)
D.O.C PULSE
————
PLAY H
REC H
AUDIO MUTE
POWER UP L
CN3002
1 AC 4.5V
2 AC 4.5V
3 ALWAYS 5.8V
4 GND
5 ALWAYS 33V
6 ALWAYS 12V
7 ALWAYS -30V
8 COUNT PULSE
9 COUNT UP/DW
10 REW STOP
11 S OUT (T-IN)
12 S CLOCK
13 S IN (T-OUT)
14 ————
15 ENDLESS PLAY

Gesamtverdrahtungs-Plan
Overall Wiring Diagram

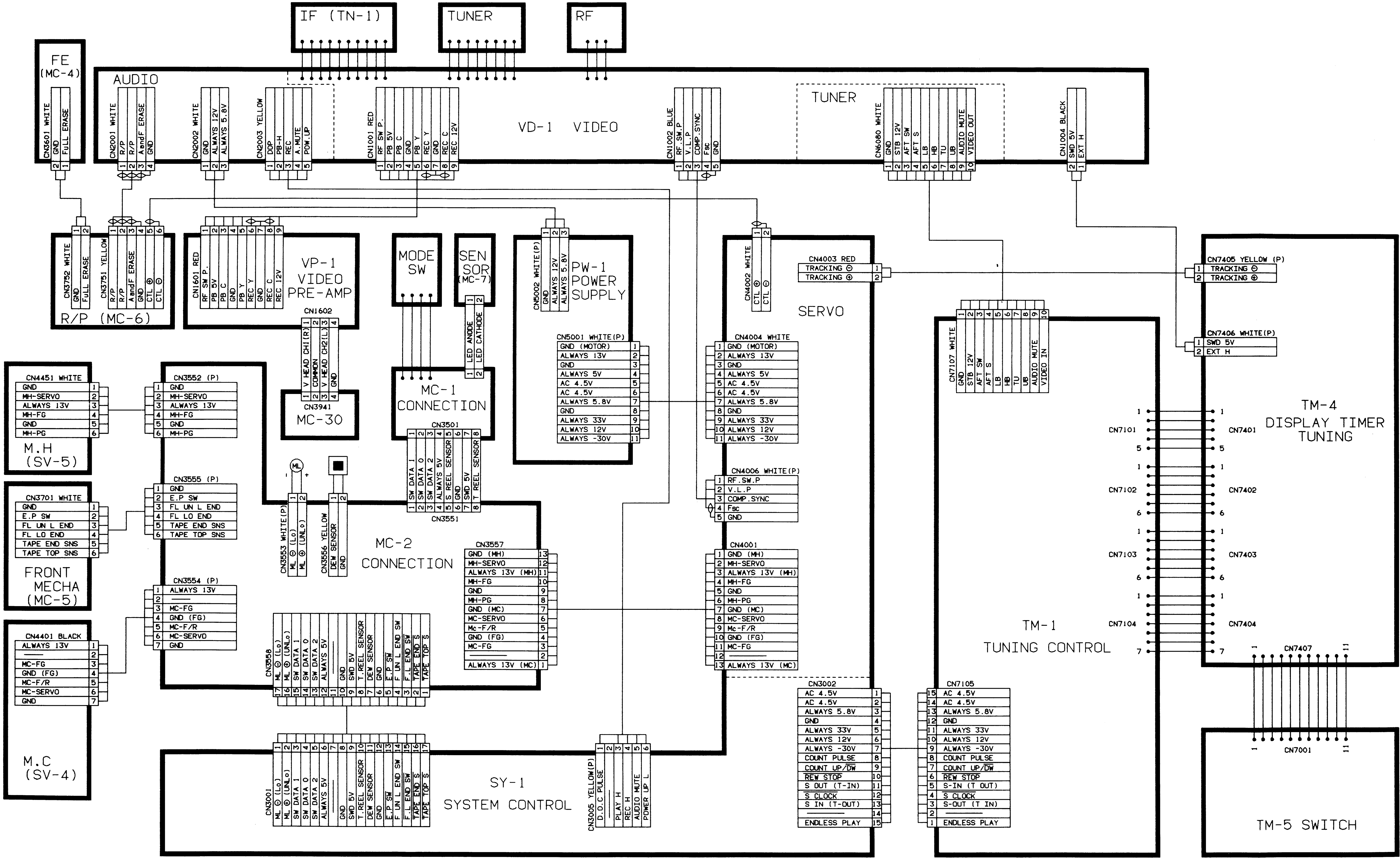
German-Version


IF (TN-1)
TUNER
RF
FE (MC-4)
CN3601 WHITE
GND
FULL ERASE
AUDIO
CN2001 WHITE
R/P
R/P
A and F ERASE
GND
CN2002 WHITE
GND
ALWAYS 12V
ALWAYS 5.8V
CN2003 YELLOW
DOP
PB-H
REC
A.MUTE
POW.UP
CN1001 RED
RF SW P.
PB 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
VD-1 VIDEO
CN1002 BLUE
RF.SW.P
V.L.P
COMP.SYNC
Fsc
GND
TUNER
CN6080 WHITE
GND
ALWAYS 12V
AFT SW
AFT S
LB
HB
TU
UB
AUDIO MUTE
VIDEO OUT
CN1004 BLACK
SWD 5V
EXT H
TM-3
CN7301 RED
GND
ALWAYS 12V
ALWAYS 5V
SCL
SDA
DAVN
GND
VIDEO IN
TM-2
CN7201
GND
ALWAYS 12V
ALWAYS 5V
SCL
VIDEO
GND
DAVN
SDA
VPS(OPTION)
CN3752 WHITE
GND
FULL ERASE
CN3751 YELLOW
R/P
R/P
A and F ERASE
GND
CTL ⊕
CTL ⊖
R/P (MC-6)
CN1601 RED
RF SW P.
PB 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
VP-1 VIDEO PRE-AMP
CN1602
CN3941
V HEAD CH1(R)
COMMON
V HEAD CH2(L)
GND
MC-30
MODE SW
SEN SOR (MC-7)
LED ANODE
LED CATHODE
MC-1 CONNECTION
CN3501
CN3551
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
S REEL SENSOR
GND
SWD 5V
T REEL SENSOR
CN5002 WHITE(P)
GND
ALWAYS 12V
ALWAYS 5.8V
PW-1 POWER SUPPLY
CN5001 WHITE(P)
GND (MOTOR)
ALWAYS 13V
GND
ALWAYS 5V
AC 4.5V
AC 4.5V
ALWAYS 5.8V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
CN4002 WHITE
CTL ⊕
CTL ⊖
CN4003 RED
TRACKING ⊖
TRACKING ⊕
SERVO
CN4004 WHITE
GND (MOTOR)
ALWAYS 13V
GND
ALWAYS 5V
AC 4.5V
AC 4.5V
ALWAYS 5.8V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
CN4006 WHITE(P)
RF.SW.P
V.L.P
COMP.SYNC
Fsc
GND
CN4001
GND (MH)
MH-SERVO
ALWAYS 13V (MH)
MH-FG
GND
MH-PG
GND (MC)
MC-SERVO
Mc-F/R
GND (FG)
MC-FG
ALWAYS 13V (MC)
CN4451 WHITE
GND
MH-SERVO
ALWAYS 13V
MH-FG
GND
MH-PG
M.H (SV-5)
CN3552 (P)
GND
MH-SERVO
ALWAYS 13V
MH-FG
GND
MH-PG
CN3701 WHITE
GND
E.P SW
FL UN L END
FL LO END
TAPE END SNS
TAPE TOP SNS
FRONT MECHA (MC-5)
CN3555 (P)
GND
E.P SW
FL UN L END
FL LO END
TAPE END SNS
TAPE TOP SNS
CN4401 BLACK
ALWAYS 13V
MC-FG
GND (FG)
MC-F/R
MC-SERVO
GND
M.C (SV-4)
CN3554 (P)
ALWAYS 13V
MC-FG
GND (FG)
MC-F/R
MC-SERVO
GND
ML
CN3553 WHITE(P)
ML ⊖ (Lo)
ML ⊕ (UNLo)
CN3556 YELLOW
DEW SENSOR
GND
MC-2 CONNECTION
CN3557
GND (MH)
MH-SERVO
ALWAYS 13V (MH)
MH-FG
GND
MH-PG
GND (MC)
MC-SERVO
Mc-F/R
GND (FG)
MC-FG
ALWAYS 13V (MC)
CN3558
ML ⊖ (Lo)
ML ⊕ (UNLo)
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
GND
SWD 5V
T.REEL SENSOR
DEW SENSOR
GND
E.P SW
F.UN L END SW
F.L END SW
TAPE END S
TAPE TOP S
CN3001
SY-1 SYSTEM CONTROL
CN3005 YELLOW(P)
D.D.C PULSE
PLAY H
REC H
AUDIO MUTE
POWER UP L
CN3002
AC 4.5V
AC 4.5V
ALWAYS 5.8V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DW
REW STOP
S OUT (T-IN)
S CLOCK
S IN (T-OUT)
ENDLESS PLAY
CN7105
AC 4.5V
AC 4.5V
ALWAYS 5.8V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DW
REW STOP
S-IN (T OUT)
S CLOCK
S-OUT (T IN)
ENDLESS PLAY
CN7107 WHITE
GND
ALWAYS 12V
AFT SW
AFT S
LB
HB
TU
UB
AUDIO MUTE
VIDEO IN
CN7106 RED
GND
ALWAYS 12V
ALWAYS 5V
SCL
SDA
GND
VIDEO OUT
TM-1 TUNING CONTROL
CN7101
CN7102
CN7103
CN7104
CN7401
CN7402
CN7403
CN7404
CN7405 YELLOW (P)
TRACKING ⊖
TRACKING ⊕
CN7406 WHITE(P)
SWD 5V
EXT H
TM-4 DISPLAY TIMER TUNING
CN7407
CN7001
TM-5 SWITCH

Gesamtverdrahtungs-Plan
Overall Wiring Diagram

***UK Version**

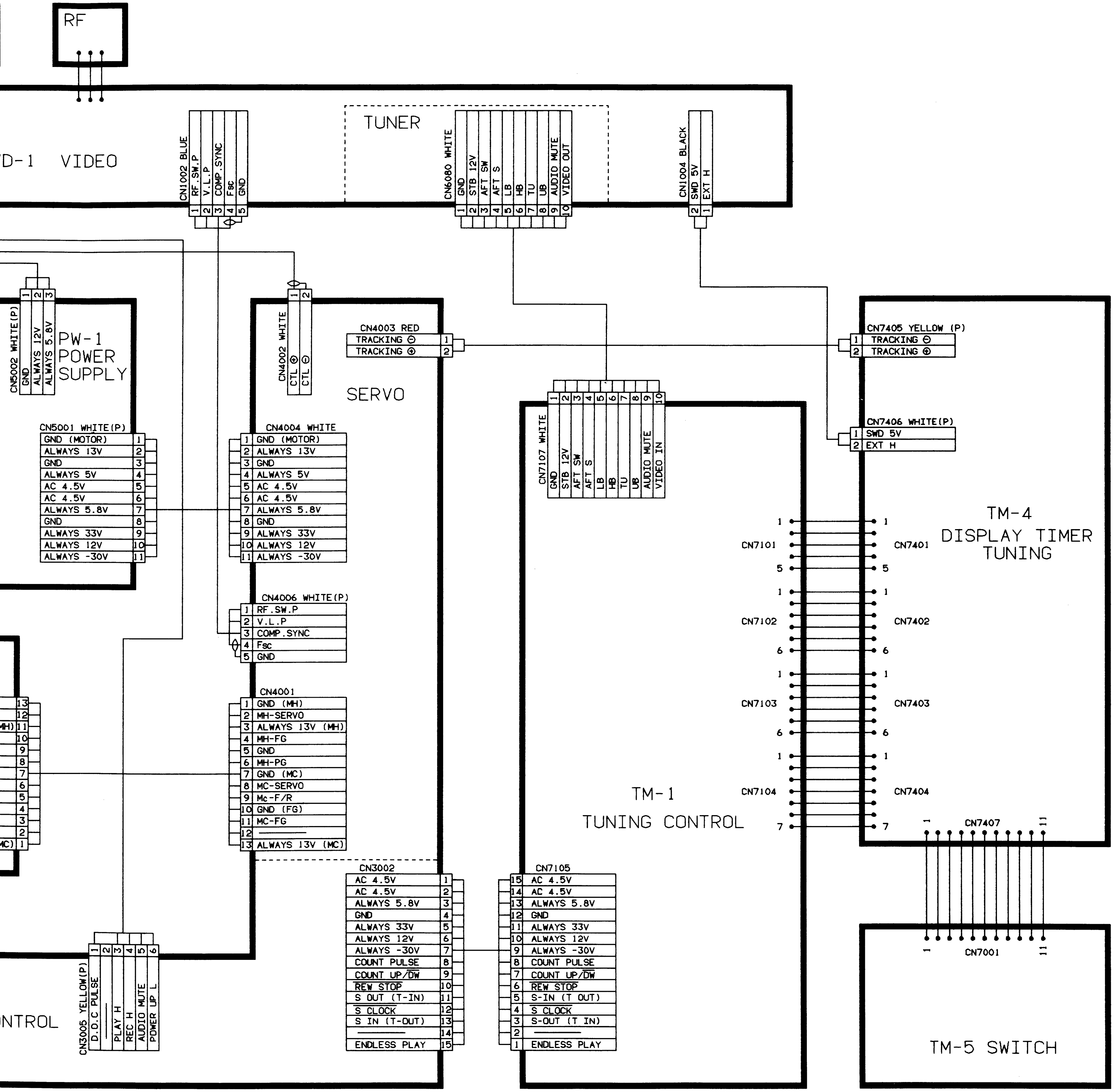
***UK stands for United Kingdom**


IF (TN-1)
TUNER
RF
FE (MC-4)
CN3601 WHITE
GND
FuLL ERASE
AUDIO
CN2001 WHITE
R/P
R/P
AandF ERASE
GND
CN2002 WHITE
GND
ALWAYS 12V
ALWAYS 5.8V
CN2003 YELLOW
DOP
PB-H
REC
A.MUTE
POW.UP
CN1001 RED
RF SW P.
PB 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
VD-1 VIDEO
CN1002 BLUE
RF SW.P
V.L.P
COMP.SYNC
Fsc
GND
TUNER
CN6080 WHITE
GND
STB 12V
AFT SW
AFT S
LB
HB
TU
UB
AUDIO MUTE
VIDEO OUT
CN1004 BLACK
SWD 5V
EXT H
CN3752 WHITE
GND
FuLL ERASE
CN3751 YELLOW
R/P
R/P
AandF ERASE
GND
CTL ⊕
CTL ⊖
R/P (MC-6)
CN1601 RED
RF SW P.
PB 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
VP-1 VIDEO PRE-AMP
CN1602
V HEAD CH1(R)
COMMON
V HEAD CH2(L)
GND
CN3941
MC-30
MODE SW
SEN SOR (MC-7)
LED ANODE
LED CATHODE
MC-1 CONNECTION
CN3501
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
S REEL SENSOR
GND
SWD 5V
T REEL SENSOR
CN3551
CN5002 WHITE(P)
GND
ALWAYS 12V
ALWAYS 5.8V
PW-1 POWER SUPPLY
CN5001 WHITE(P)
1 GND (MOTOR)
2 ALWAYS 13V
3 GND
4 ALWAYS 5V
5 AC 4.5V
6 AC 4.5V
7 ALWAYS 5.8V
8 GND
9 ALWAYS 33V
10 ALWAYS 12V
11 ALWAYS -30V
CN4002 WHITE
CTL ⊕
CTL ⊖
CN4003 RED
TRACKING ⊖
TRACKING ⊕
SERVO
CN4004 WHITE
1 GND (MOTOR)
2 ALWAYS 13V
3 GND
4 ALWAYS 5V
5 AC 4.5V
6 AC 4.5V
7 ALWAYS 5.8V
8 GND
9 ALWAYS 33V
10 ALWAYS 12V
11 ALWAYS -30V
CN4006 WHITE(P)
1 RF.SW.P
2 V.L.P
3 COMP.SYNC
4 Fsc
5 GND
CN4001
1 GND (MH)
2 MH-SERVO
3 ALWAYS 13V (MH)
4 MH-FG
5 GND
6 MH-PG
7 GND (MC)
8 MC-SERVO
9 Mc-F/R
10 GND (FG)
11 MC-FG
12 ———
13 ALWAYS 13V (MC)
CN4451 WHITE
1 GND
2 MH-SERVO
3 ALWAYS 13V
4 MH-FG
5 GND
6 MH-PG
M.H (SV-5)
CN3552 (P)
1 GND
2 MH-SERVO
3 ALWAYS 13V
4 MH-FG
5 GND
6 MH-PG
CN3701 WHITE
1 GND
2 E.P SW
3 FL UN L END
4 FL LO END
5 TAPE END SNS
6 TAPE TOP SNS
FRONT MECHA (MC-5)
CN3555 (P)
1 GND
2 E.P SW
3 FL UN L END
4 FL LO END
5 TAPE END SNS
6 TAPE TOP SNS
CN4401 BLACK
1 ALWAYS 13V
2 ———
3 MC-FG
4 GND (FG)
5 MC-F/R
6 MC-SERVO
7 GND
M.C (SV-4)
CN3554 (P)
1 ALWAYS 13V
2 ———
3 MC-FG
4 GND (FG)
5 MC-F/R
6 MC-SERVO
7 GND
ML
CN3553 WHITE(P)
ML ⊖ (Lo)
ML ⊕ (UNLo)
CN3556 YELLOW
DEW SENSOR
GND
MC-2 CONNECTION
CN3557
13 GND (MH)
12 MH-SERVO
11 ALWAYS 13V (MH)
10 MH-FG
9 GND
8 MH-PG
7 GND (MC)
6 MC-SERVO
5 Mc-F/R
4 GND (FG)
3 MC-FG
2 ———
1 ALWAYS 13V (MC)
CN3558
ML ⊖ (Lo)
ML ⊕ (UNLo)
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
———
GND
SWD 5V
T.REEL SENSOR
DEW SENSOR
GND
E.P SW
F. UN L END SW
F.L END SW
TAPE END S
TAPE TOP S
CN3001
ML ⊖ (Lo)
ML ⊕ (UNLo)
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
———
GND
SWD 5V
T.REEL SENSOR
DEW SENSOR
GND
E.P SW
F. UN L END SW
F.L END SW
TAPE END S
TAPE TOP S
SY-1 SYSTEM CONTROL
CN3005 YELLOW(P)
D.O.C PULSE
———
PLAY H
REC H
AUDIO MUTE
POWER UP L
CN3002
1 AC 4.5V
2 AC 4.5V
3 ALWAYS 5.8V
4 GND
5 ALWAYS 33V
6 ALWAYS 12V
7 ALWAYS -30V
8 COUNT PULSE
9 COUNT UP/DW
10 REW STOP
11 S OUT (T-IN)
12 S CLOCK
13 S IN (T-OUT)
14 ———
15 ENDLESS PLAY
CN7105
15 AC 4.5V
14 AC 4.5V
13 ALWAYS 5.8V
12 GND
11 ALWAYS 33V
10 ALWAYS 12V
9 ALWAYS -30V
8 COUNT PULSE
7 COUNT UP/DW
6 REW STOP
5 S-IN (T OUT)
4 S CLOCK
3 S-OUT (T IN)
2 ———
1 ENDLESS PLAY
CN7107 WHITE
GND
STB 12V
AFT SW
AFT S
LB
HB
TU
UB
AUDIO MUTE
VIDEO IN
TM-1 TUNING CONTROL
CN7101
CN7102
CN7103
CN7104
CN7405 YELLOW (P)
1 TRACKING ⊖
2 TRACKING ⊕
CN7406 WHITE(P)
1 SWD 5V
2 EXT H
TM-4 DISPLAY TIMER TUNING
CN7401
CN7402
CN7403
CN7404
CN7407
CN7001
TM-5 SWITCH

Gesamtverdrahtungs-Plan
Overall Wiring Diagram

*UK Version

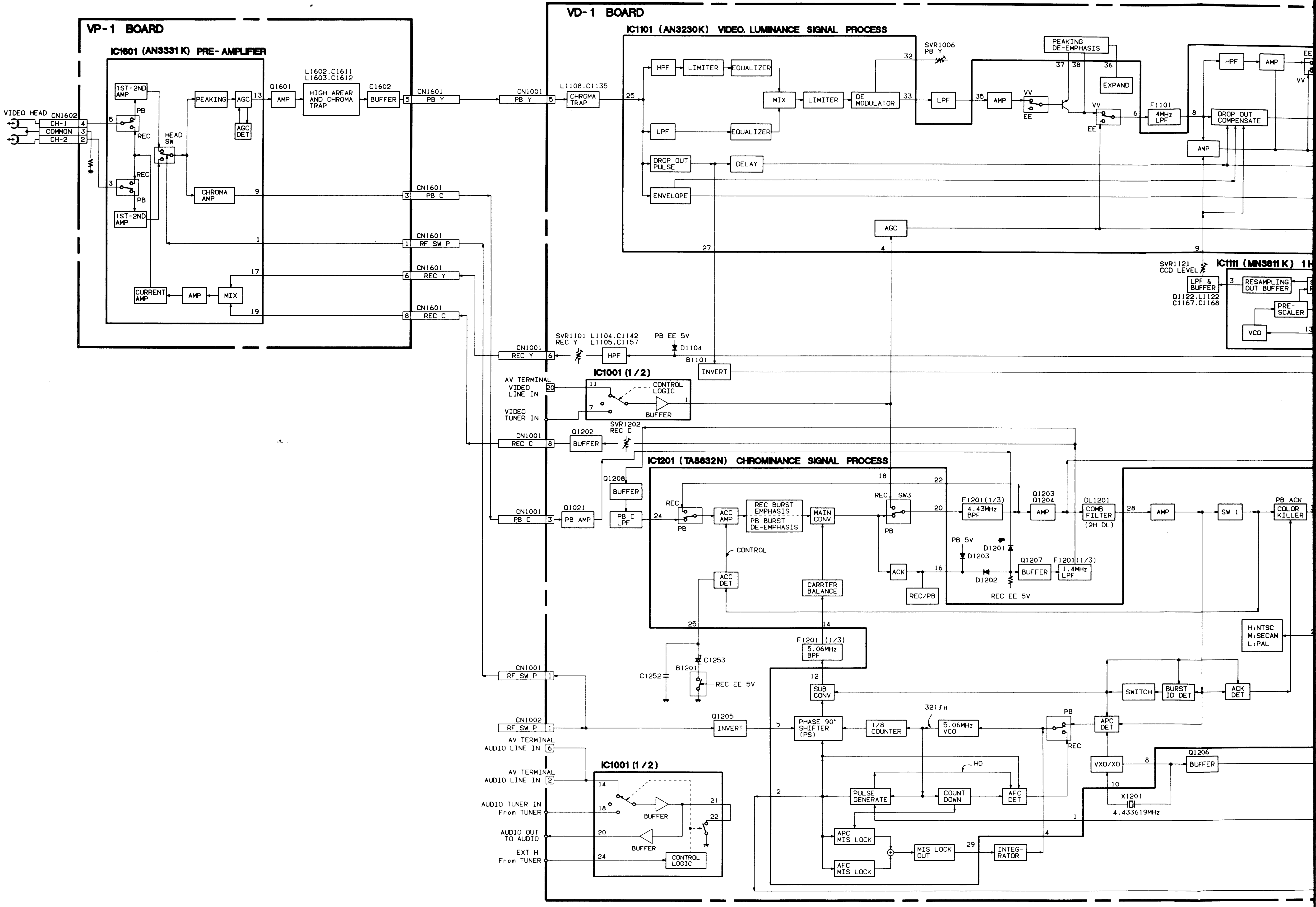
***UK stands for United Kingdom**



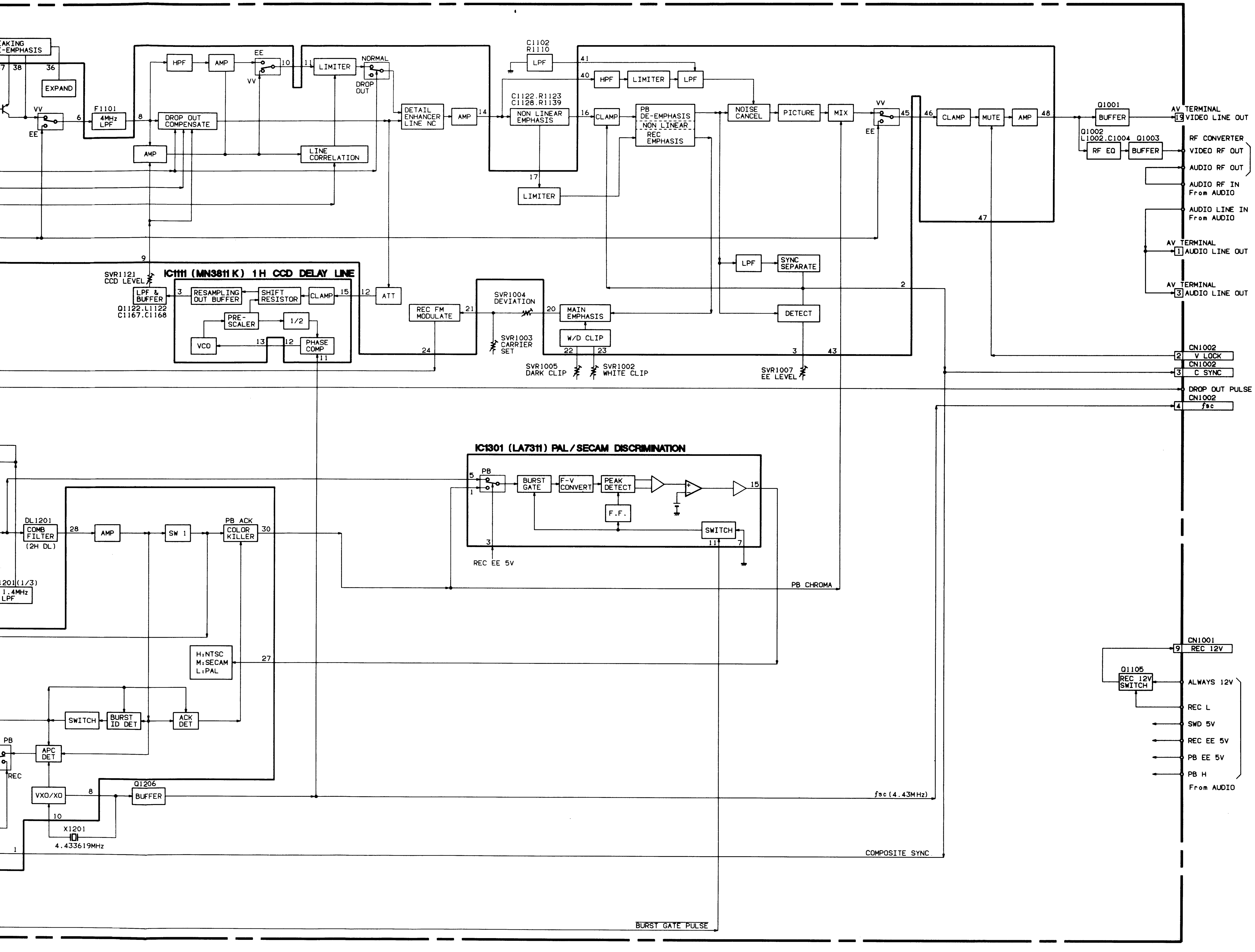
RF
D-1 VIDEO
CN1002 BLUE
1 RF.SW.P
2 V.L.P
3 COMP.SYNC
4 Fsc
5 GND
TUNER
CN6080 WHITE
1 GND
2 STB 12V
3 AFT SW
4 AFT S
5 LB
6 HB
7 TU
8 UB
9 AUDIO MUTE
10 VIDEO OUT
CN1004 BLACK
2 SWD 5V
1 EXT H
CN5002 WHITE(P)
1 GND
2 ALWAYS 12V
3 ALWAYS 5.8V
PW-1 POWER SUPPLY
CN4002 WHITE
1 CTL ⊕
2 CTL ⊖
CN4003 RED
TRACKING ⊖ 1
TRACKING ⊕ 2
SERVO
CN5001 WHITE(P)
GND (MOTOR) 1
ALWAYS 13V 2
GND 3
ALWAYS 5V 4
AC 4.5V 5
AC 4.5V 6
ALWAYS 5.8V 7
GND 8
ALWAYS 33V 9
ALWAYS 12V 10
ALWAYS -30V 11
CN4004 WHITE
1 GND (MOTOR)
2 ALWAYS 13V
3 GND
4 ALWAYS 5V
5 AC 4.5V
6 AC 4.5V
7 ALWAYS 5.8V
8 GND
9 ALWAYS 33V
10 ALWAYS 12V
11 ALWAYS -30V
CN4006 WHITE(P)
1 RF.SW.P
2 V.L.P
3 COMP.SYNC
4 Fsc
5 GND
CN4001
1 GND (MH)
2 MH-SERVO
3 ALWAYS 13V (MH)
4 MH-FG
5 GND
6 MH-PG
7 GND (MC)
8 MC-SERVO
9 Mc-F/R
10 GND (FG)
11 MC-FG
12
13 ALWAYS 13V (MC)
CN3002
AC 4.5V 1
AC 4.5V 2
ALWAYS 5.8V 3
GND 4
ALWAYS 33V 5
ALWAYS 12V 6
ALWAYS -30V 7
COUNT PULSE 8
COUNT UP/DW 9
REW STOP 10
S OUT (T-IN) 11
S CLOCK 12
S IN (T-OUT) 13
14
ENDLESS PLAY 15
CN3005 YELLOW(P)
1 D.D.C PULSE
2
3 PLAY H
4 REC H
5 AUDIO MUTE
6 POWER UP L
NTROL
CN7107 WHITE
1 GND
2 STB 12V
3 AFT SW
4 AFT S
5 LB
6 HB
7 TU
8 UB
9 AUDIO MUTE
10 VIDEO IN
TM-1 TUNING CONTROL
CN7105
15 AC 4.5V
14 AC 4.5V
13 ALWAYS 5.8V
12 GND
11 ALWAYS 33V
10 ALWAYS 12V
9 ALWAYS -30V
8 COUNT PULSE
7 COUNT UP/DW
6 REW STOP
5 S-IN (T OUT)
4 S CLOCK
3 S-OUT (T IN)
2
1 ENDLESS PLAY
CN7101 1 5
CN7102 1 6
CN7103 1 6
CN7104 1 7
CN7401 1 5
CN7402 1 6
CN7403 1 6
CN7404 1 7
CN7405 YELLOW (P)
1 TRACKING ⊖
2 TRACKING ⊕
CN7406 WHITE(P)
1 SWD 5V
2 EXT H
TM-4 DISPLAY TIMER TUNING
CN7407 1 11
CN7001 1 11
TM-5 SWITCH

Video und Vorverstärker-Blockdarstellung
Video and Pre-Amp Block Diagram

German-Version


VP-1 BOARD
IC1601 (AN3331K) PRE-AMPLIFIER
VIDEO HEAD
CN1602
CH-1
COMMON
CH-2
1ST-2ND AMP
PB
REC
HEAD SW
PEAKING
AGC
AGC DET
Q1601
AMP
L1602.C1611
L1603.C1612
HIGH AREAR AND CHROMA TRAP
Q1602
BUFFER
CHROMA AMP
CURRENT AMP
AMP
MIX
CN1601
PB Y
PB C
RF SW P
REC Y
REC C
VD-1 BOARD
CN1001
L1108.C1135
CHROMA TRAP
IC1101 (AN3230K) VIDEO. LUMINANCE SIGNAL PROCESS
HPF
LIMITER
EQUALIZER
LPF
MIX
DE MODULATOR
SVR1006
PB Y
PEAKING DE-EMPHASIS
EXPAND
VV
EE
DROP OUT PULSE
DELAY
ENVELOPE
AGC
F1101
4MHz LPF
DROP OUT COMPENSATE
SVR1121
CCD LEVEL
IC1111 (MN3811K) 1H
LPF & BUFFER
Q1122.L1122
C1167.C1168
RESAMPLING OUT BUFFER
PRE-SCALER
VCO
SVR1101
REC Y
L1104.C1142
L1105.C1157
PB EE 5V
D1104
B1101
INVERT
IC1001 (1/2)
AV TERMINAL
VIDEO LINE IN
VIDEO TUNER IN
CONTROL LOGIC
BUFFER
Q1202
SVR1202
REC C
IC1201 (TA8632N) CHROMINANCE SIGNAL PROCESS
Q1208
PB C LPF
Q1021
PB AMP
ACC AMP
REC BURST EMPHASIS
PB BURST DE-EMPHASIS
MAIN CONV
CONTROL
ACC DET
CARRIER BALANCE
SW3
ACK
REC/PB
F1201(1/3)
4.43MHz BPF
Q1203
Q1204
DL1201
COMB FILTER
(2H DL)
PB 5V
D1201
D1203
D1202
Q1207
1.4MHz LPF
REC EE 5V
SW 1
PB ACK
COLOR KILLER
H:NTSC
M:SECAM
L:PAL
5.06MHz BPF
C1253
C1252
B1201
REC EE 5V
SUB CONV
SWITCH
BURST ID DET
ACK DET
CN1002
Q1205
PHASE 90° SHIFTER (PS)
1/8 COUNTER
321fH
5.06MHz VCO
APC DET
VXO/XO
Q1206
X1201
4.433619MHz
HD
PULSE GENERATE
COUNT DOWN
AFC DET
APC MIS LOCK
AFC MIS LOCK
MIS LOCK OUT
INTEG-RATOR
AUDIO LINE IN
AUDIO TUNER IN
From TUNER
AUDIO OUT
TO AUDIO
EXT H
From TUNER

Video und Vorverstärker-Blockdarstellung
Video and Pre-Amp Block Diagram

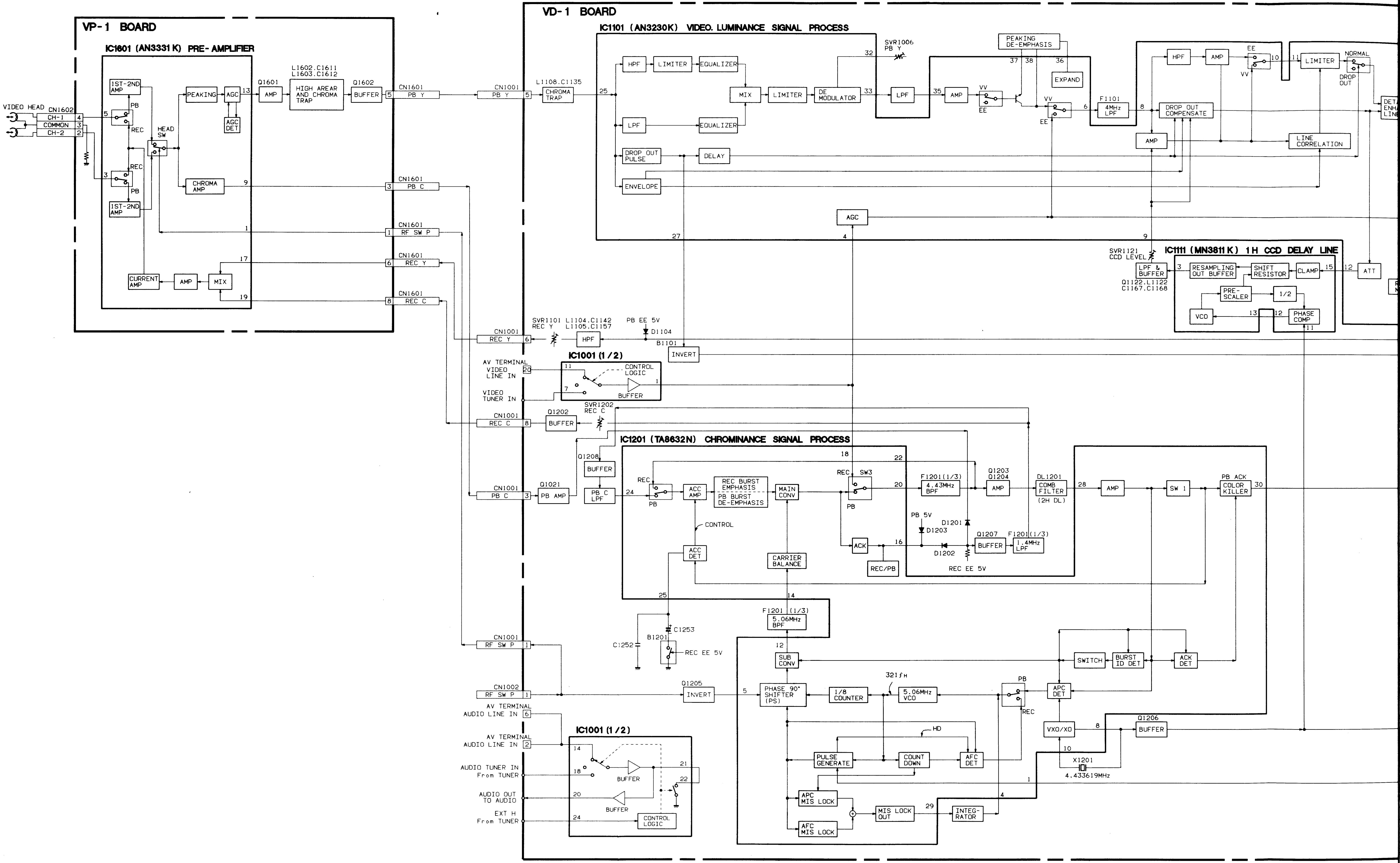


AKING
-EMPHASIS
7
38
36
EXPAND
VV
EE
6
F1101
4MHz LPF
8
DROP OUT COMPENSATE
HPF
AMP
EE
VV
10
11
LIMITER
NORMAL
DROP OUT
AMP
LINE CORRELATION
DETAIL ENHANCER LINE NC
AMP
14
C1102
R1110
LPF
41
40
HPF
LIMITER
LPF
C1122.R1123
C1128.R1139
NON LINEAR EMPHASIS
16
CLAMP
PB DE-EMPHASIS
NON LINEAR
REC EMPHASIS
17
LIMITER
NOISE CANCEL
PICTURE
MIX
VV
EE
45
46
CLAMP
MUTE
AMP
48
47
Q1001
BUFFER
Q1002
L1002.C1004
Q1003
RF EQ
BUFFER
AV TERMINAL
19 VIDEO LINE OUT
RF CONVERTER
VIDEO RF OUT
AUDIO RF OUT
AUDIO RF IN From AUDIO
AUDIO LINE IN From AUDIO
AV TERMINAL
1 AUDIO LINE OUT
AV TERMINAL
3 AUDIO LINE OUT
9
SVR1121 CCD LEVEL
IC1111 (MN3811K) 1H CCD DELAY LINE
LPF & BUFFER
Q1122.L1122
C1167.C1168
3
RESAMPLING OUT BUFFER
SHIFT RESISTOR
CLAMP
15
12
ATT
PRE-SCALER
1/2
VCO
13
12
PHASE COMP
11
REC FM MODULATE
21
24
SVR1004 DEVIATION
20
SVR1003 CARRIER SET
MAIN EMPHASIS
W/D CLIP
22
23
SVR1005 DARK CLIP
SVR1002 WHITE CLIP
LPF
SYNC SEPARATE
2
DETECT
3
43
SVR1007 EE LEVEL
CN1002
2 V LOCK
CN1002
3 C SYNC
DROP OUT PULSE
CN1002
4 fsc
IC1301 (LA7311) PAL/SECAM DISCRIMINATION
5
PB
1
BURST GATE
F-V CONVERT
PEAK DETECT
F.F.
15
SWITCH
11
7
3
REC EE 5V
PB CHROMA
DL1201
COMB FILTER (2H DL)
28
AMP
SW 1
PB ACK
COLOR KILLER
30
201(1/3)
1.4MHz LPF
H:NTSC
M:SECAM
L:PAL
27
SWITCH
BURST ID DET
ACK DET
PB
APC DET
REC
VXO/XO
8
Q1206
BUFFER
10
X1201
4.433619MHz
1
fsc(4.43MHz)
COMPOSITE SYNC
BURST GATE PULSE
CN1001
9 REC 12V
Q1105
REC 12V SWITCH
ALWAYS 12V
REC L
SWD 5V
REC EE 5V
PB EE 5V
PB H
From AUDIO

***UK stands for United Kingdom**

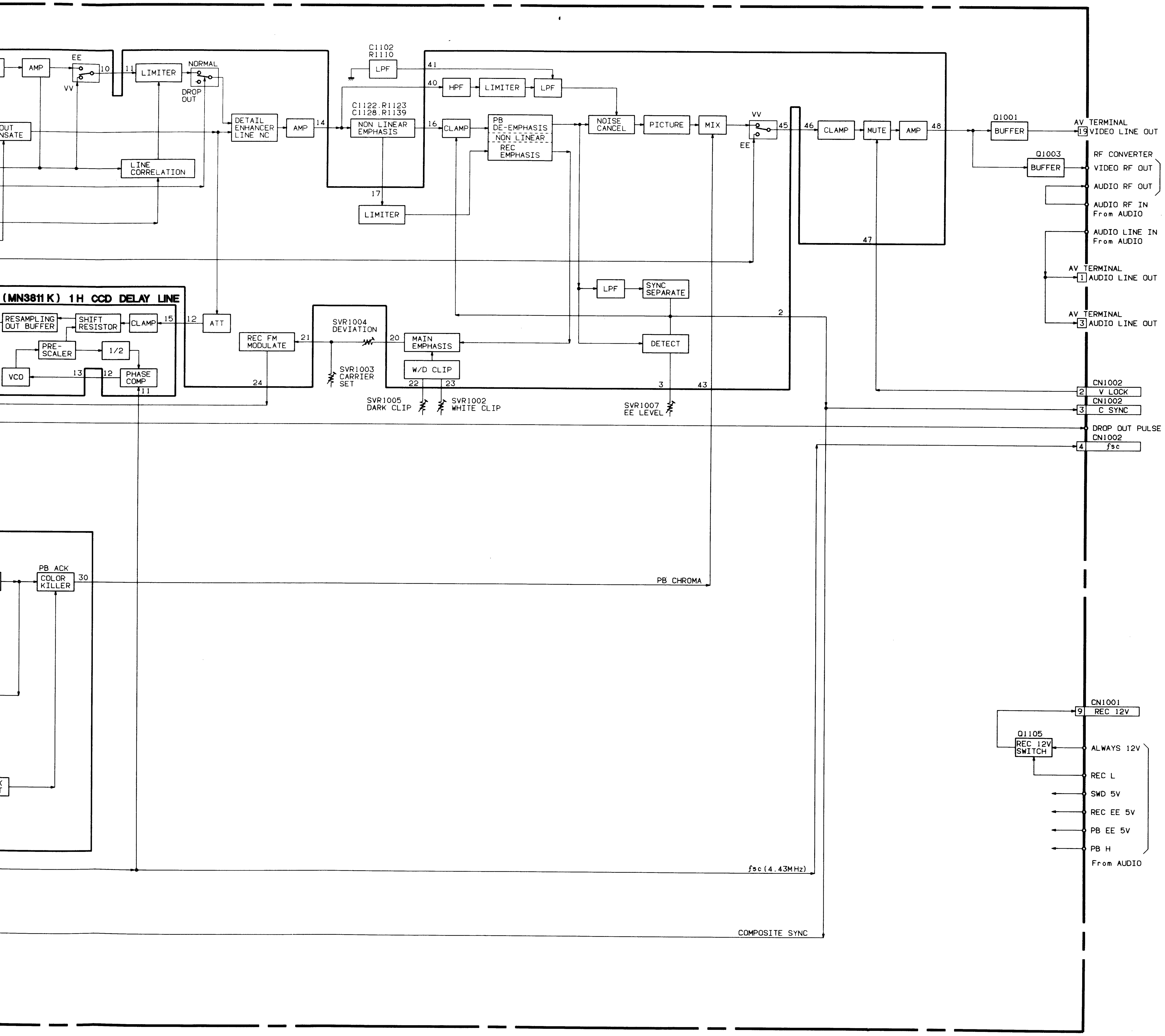
Video und Vorverstärker-Blockdarstellung
Video and Pre-Amp Block Diagram

***UK Version**

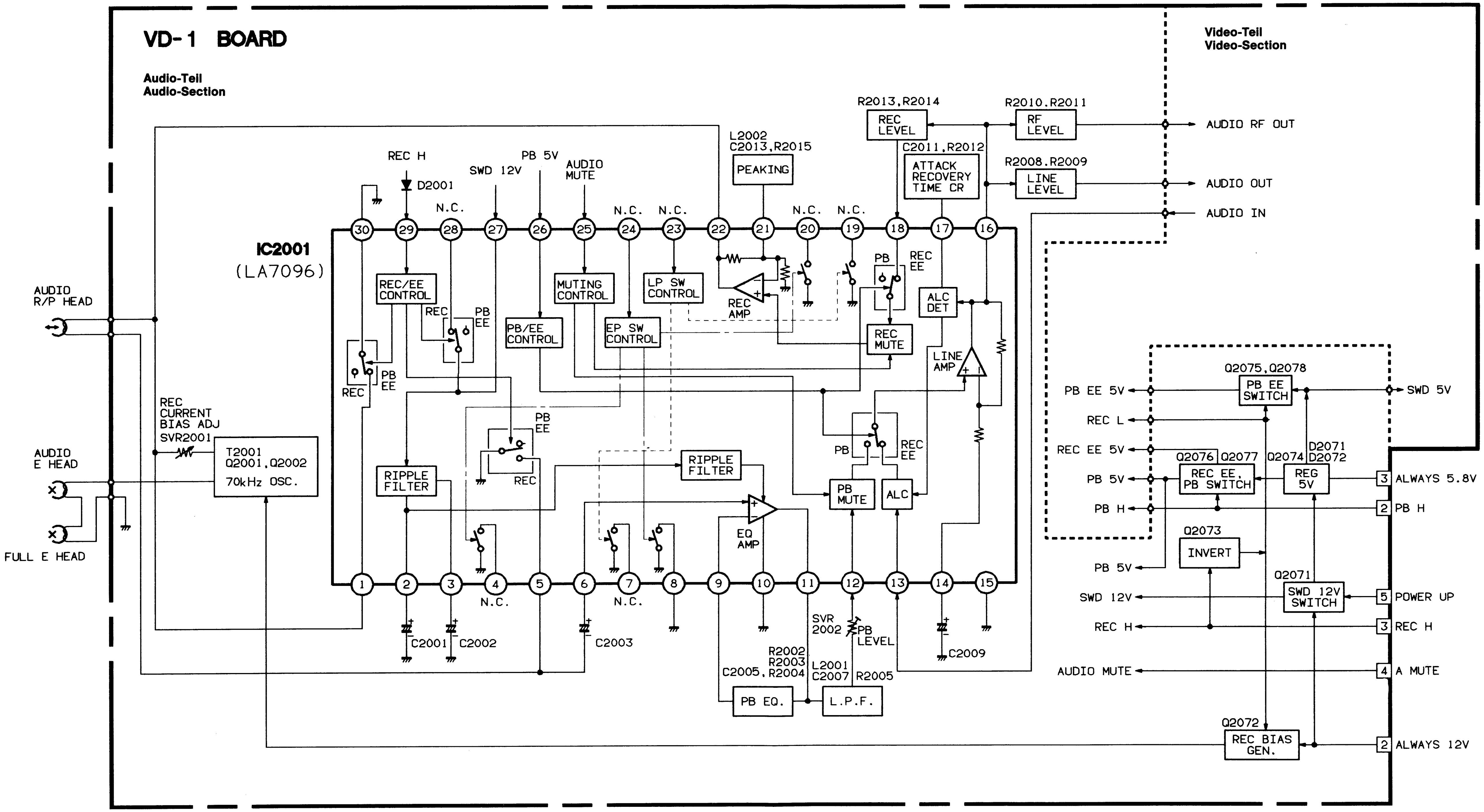


VP-1 BOARD
IC1601 (AN3331K) PRE-AMPLIFIER
VIDEO HEAD
CN1602
CH-1
COMMON
CH-2
1ST-2ND AMP
PB
REC
HEAD SW
PEAKING
AGC
AGC DET
CHROMA AMP
CURRENT AMP
AMP
MIX
Q1601
AMP
L1602.C1611
L1603.C1612
HIGH AREAR AND CHROMA TRAP
Q1602
BUFFER
CN1601
PB Y
PB C
RF SW P
REC Y
REC C
VD-1 BOARD
IC1101 (AN3230K) VIDEO. LUMINANCE SIGNAL PROCESS
CN1001
L1108.C1135
CHROMA TRAP
HPF
LIMITER
EQUALIZER
MIX
DE MODULATOR
LPF
DROP OUT PULSE
DELAY
ENVELOPE
SVR1006
PB Y
PEAKING DE-EMPHASIS
EXPAND
AMP
VV
EE
F1101
4MHz LPF
DROP OUT COMPENSATE
LINE CORRELATION
NORMAL
DROP OUT
AGC
SVR1121
CCD LEVEL
IC1111 (MN3811K) 1H CCD DELAY LINE
LPF & BUFFER
Q1122.L1122
C1167.C1168
RESAMPLING OUT BUFFER
SHIFT RESISTOR
CLAMP
PRE-SCALER
1/2
VCO
PHASE COMP
ATT
SVR1101
REC Y
L1104.C1142
L1105.C1157
PB EE 5V
D1104
B1101
INVERT
AV TERMINAL
VIDEO LINE IN
VIDEO TUNER IN
IC1001 (1/2)
CONTROL LOGIC
BUFFER
Q1202
SVR1202
REC C
IC1201 (TA8632N) CHROMINANCE SIGNAL PROCESS
Q1208
Q1021
PB AMP
PB C LPF
ACC AMP
REC BURST EMPHASIS
PB BURST DE-EMPHASIS
MAIN CONV
CONTROL
ACC DET
CARRIER BALANCE
SW3
F1201 (1/3)
4.43MHz BPF
Q1203
Q1204
DL1201
COMB FILTER
(2H DL)
SW 1
PB ACK
COLOR KILLER
PB 5V
D1201
D1203
D1202
ACK
REC/PB
Q1207
1.4MHz LPF
REC EE 5V
C1253
C1252
B1201
5.06MHz BPF
SUB CONV
CN1002
Q1205
PHASE 90° SHIFTER (PS)
1/8 COUNTER
321fH
5.06MHz VCO
APC DET
SWITCH
BURST ID DET
ACK DET
HD
PULSE GENERATE
COUNT DOWN
AFC DET
VXO/XO
Q1206
X1201
4.433619MHz
APC MIS LOCK
AFC MIS LOCK
MIS LOCK OUT
INTEG-RATOR
AUDIO LINE IN
AUDIO TUNER IN
From TUNER
AUDIO OUT
TO AUDIO
EXT H
From TUNER

Video und Vorverstärker-Blockdarstellung
Video and Pre-Amp Circuit Block Diagram

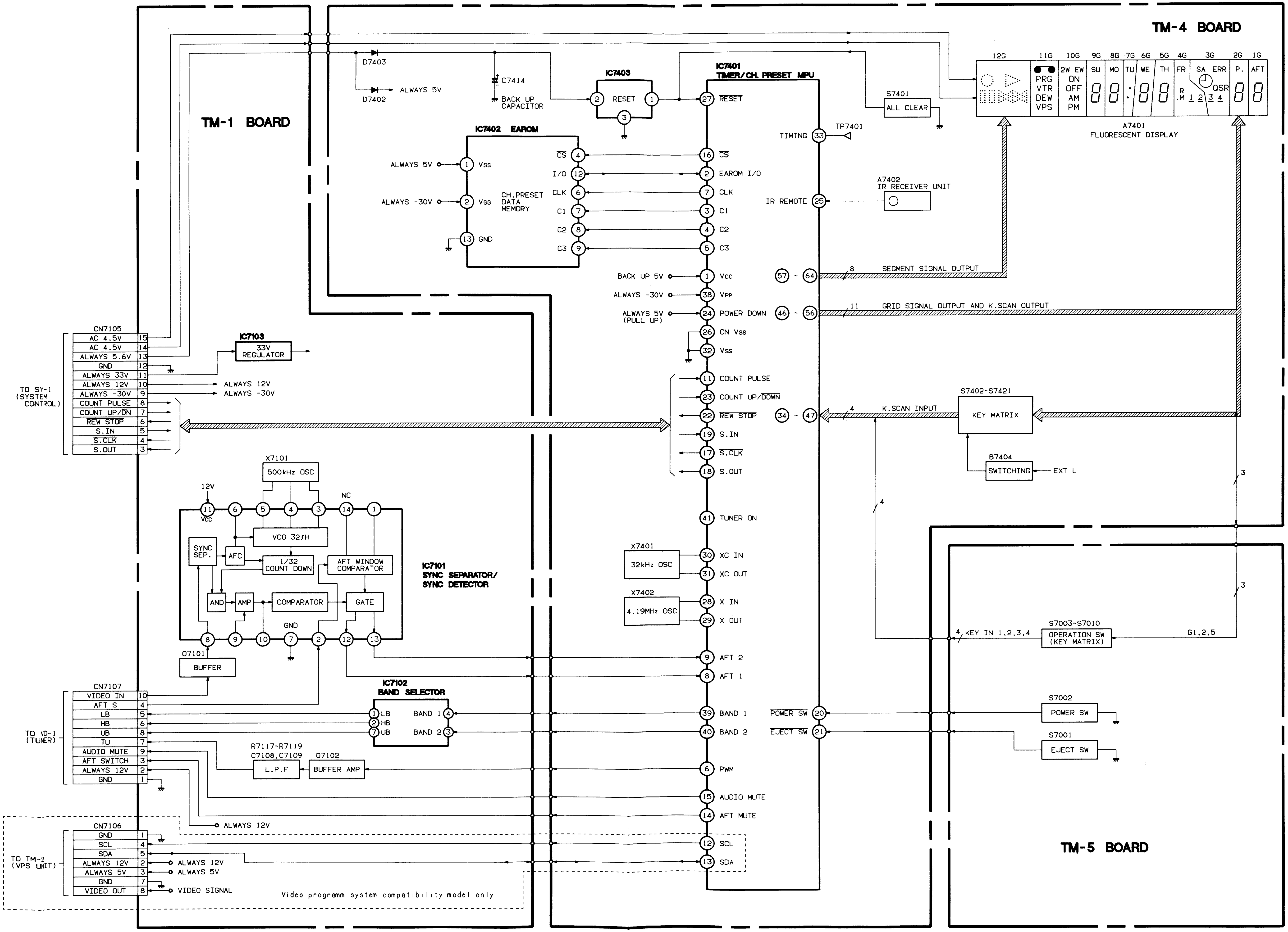

AMP
EE
VV
10
11
LIMITER
NORMAL
DROP
OUT
OUT
NSATE
LINE
CORRELATION
DETAIL
ENHANCER
LINE NC
AMP
14
C1102
R1110
LPF
41
40
HPF
LIMITER
LPF
C1122.R1123
C1128.R1139
NON LINEAR
EMPHASIS
16
CLAMP
PB
DE-EMPHASIS
NON LINEAR
REC
EMPHASIS
17
LIMITER
NOISE
CANCEL
PICTURE
MIX
VV
EE
45
46
CLAMP
MUTE
AMP
48
47
Q1001
BUFFER
Q1003
BUFFER
AV TERMINAL
19 VIDEO LINE OUT
RF CONVERTER
VIDEO RF OUT
AUDIO RF OUT
AUDIO RF IN
From AUDIO
AUDIO LINE IN
From AUDIO
AV TERMINAL
1 AUDIO LINE OUT
AV TERMINAL
3 AUDIO LINE OUT
(MN3811K) 1H CCD DELAY LINE
RESAMPLING
OUT BUFFER
SHIFT
RESISTOR
CLAMP
15
12
ATT
PRE-
SCALER
1/2
VCO
13
12
PHASE
COMP
11
REC FM
MODULATE
21
24
SVR1004
DEVIATION
20
MAIN
EMPHASIS
W/D CLIP
22
23
SVR1003
CARRIER
SET
SVR1005
DARK CLIP
SVR1002
WHITE CLIP
LPF
SYNC
SEPARATE
2
DETECT
3
43
SVR1007
EE LEVEL
CN1002
2 V LOCK
CN1002
3 C SYNC
DROP OUT PULSE
CN1002
4 fsc
PB ACK
COLOR
KILLER
30
PB CHROMA
CN1001
9 REC 12V
Q1105
REC 12V
SWITCH
ALWAYS 12V
REC L
SWD 5V
REC EE 5V
PB EE 5V
PB H
From AUDIO
fsc(4.43MHz)
COMPOSITE SYNC

Audio-Blockdarstellung
Audio Block Diagram


VD-1 BOARD
Audio-Teil
Audio-Section
Video-Teil
Video-Section
IC2001
(LA7096)
AUDIO R/P HEAD
AUDIO E HEAD
FULL E HEAD
REC CURRENT BIAS ADJ SVR2001
T2001 Q2001, Q2002
70kHz OSC.
REC H
D2001
SWD 12V
PB 5V
AUDIO MUTE
N.C.
REC/EE CONTROL
REC
PB
EE
MUTING CONTROL
LP SW CONTROL
PB/EE CONTROL
EP SW CONTROL
RIPPLE FILTER
EQ AMP
REC AMP
L2002 C2013, R2015
PEAKING
R2013, R2014
REC LEVEL
C2011, R2012
ATTACK RECOVERY TIME CR
R2010, R2011
RF LEVEL
R2008, R2009
LINE LEVEL
ALC DET
LINE AMP
REC MUTE
PB MUTE
ALC
AUDIO RF OUT
AUDIO OUT
AUDIO IN
C2001
C2002
C2003
C2009
SVR 2002
PB LEVEL
R2002 R2003 C2005, R2004
L2001 C2007
R2005
PB EQ.
L.P.F.
Q2075, Q2078
PB EE SWITCH
PB EE 5V
REC L
REC EE 5V
PB 5V
PB H
SWD 5V
Q2076
Q2077
Q2074
D2071 D2072
REC EE, PB SWITCH
REG 5V
Q2073
INVERT
Q2071
SWD 12V SWITCH
SWD 12V
REC H
AUDIO MUTE
Q2072
REC BIAS GEN.
3 ALWAYS 5.8V
2 PB H
5 POWER UP
3 REC H
4 A MUTE
2 ALWAYS 12V
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

German-Version

Timer und Abstimmungssteuerung-Blockdarstellung
Timer and Tuning Control Block Diagram

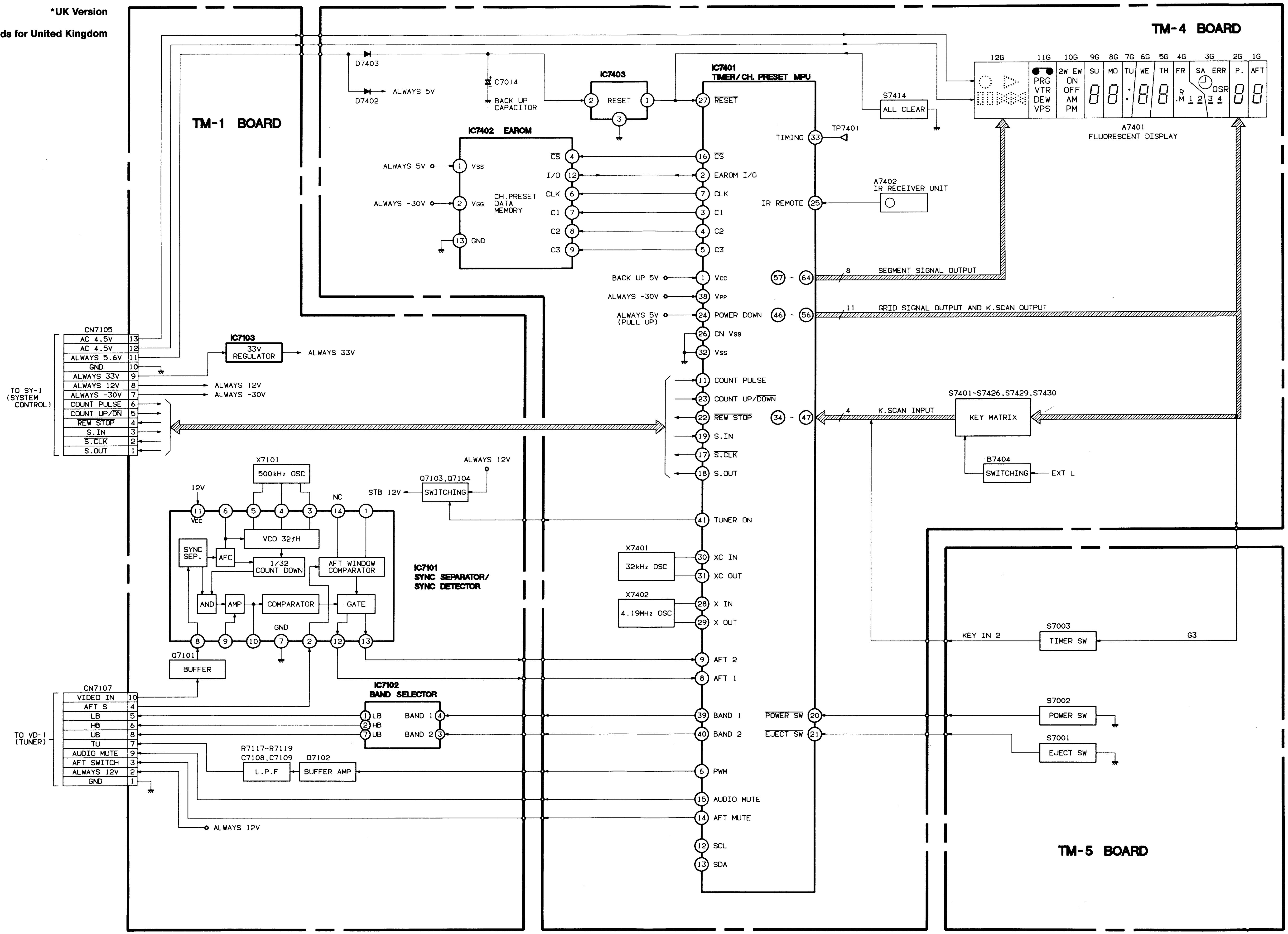


TM-4 BOARD
TM-1 BOARD
TM-5 BOARD
D7403
D7402
ALWAYS 5V
C7414
BACK UP CAPACITOR
IC7403
RESET
IC7401 TIMER/CH. PRESET MPU
S7401
ALL CLEAR
TP7401
TIMING
12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G
PRG VTR DEW VPS
2W EW ON OFF AM PM
SU MO TU WE TH FR SA ERR P. AFT
QSR
A7401 FLUORESCENT DISPLAY
IC7402 EAROM
ALWAYS 5V
ALWAYS -30V
Vss
VGG
GND
CH.PRESET DATA MEMORY
CS
I/O
CLK
C1
C2
C3
EAROM I/O
A7402 IR RECEIVER UNIT
IR REMOTE
BACK UP 5V
Vcc
ALWAYS -30V
VPP
ALWAYS 5V (PULL UP)
POWER DOWN
CN Vss
Vss
SEGMENT SIGNAL OUTPUT
GRID SIGNAL OUTPUT AND K.SCAN OUTPUT
CN7105
AC 4.5V
AC 4.5V
ALWAYS 5.6V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DN
REW STOP
S.IN
S.CLK
S.OUT
TO SY-1 (SYSTEM CONTROL)
IC7103
33V REGULATOR
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DOWN
REW STOP
S.IN
S.CLK
S.OUT
K.SCAN INPUT
S7402~S7421
KEY MATRIX
B7404
SWITCHING
EXT L
X7101
500kHz OSC
12V
Vcc
NC
VCO 32fH
SYNC SEP.
AFC
1/32 COUNT DOWN
AFT WINDOW COMPARATOR
AND
AMP
COMPARATOR
GATE
GND
IC7101 SYNC SEPARATOR/ SYNC DETECTOR
Q7101
BUFFER
TUNER ON
X7401
32kHz OSC
XC IN
XC OUT
X7402
4.19MHz OSC
X IN
X OUT
S7003~S7010
OPERATION SW (KEY MATRIX)
KEY IN 1,2,3,4
G1,2,5
AFT 2
AFT 1
CN7107
VIDEO IN
AFT S
LB
HB
UB
TU
AUDIO MUTE
AFT SWITCH
ALWAYS 12V
GND
TO VD-1 (TUNER)
IC7102 BAND SELECTOR
BAND 1
BAND 2
BAND 1
BAND 2
POWER SW
EJECT SW
S7002
POWER SW
S7001
EJECT SW
R7117~R7119
C7108,C7109
Q7102
L.P.F
BUFFER AMP
PWM
AUDIO MUTE
AFT MUTE
ALWAYS 12V
CN7106
GND
SCL
SDA
ALWAYS 12V
ALWAYS 5V
GND
VIDEO OUT
TO TM-2 (VPS UNIT)
ALWAYS 12V
ALWAYS 5V
VIDEO SIGNAL
SCL
SDA
Video programm system compatibility model only

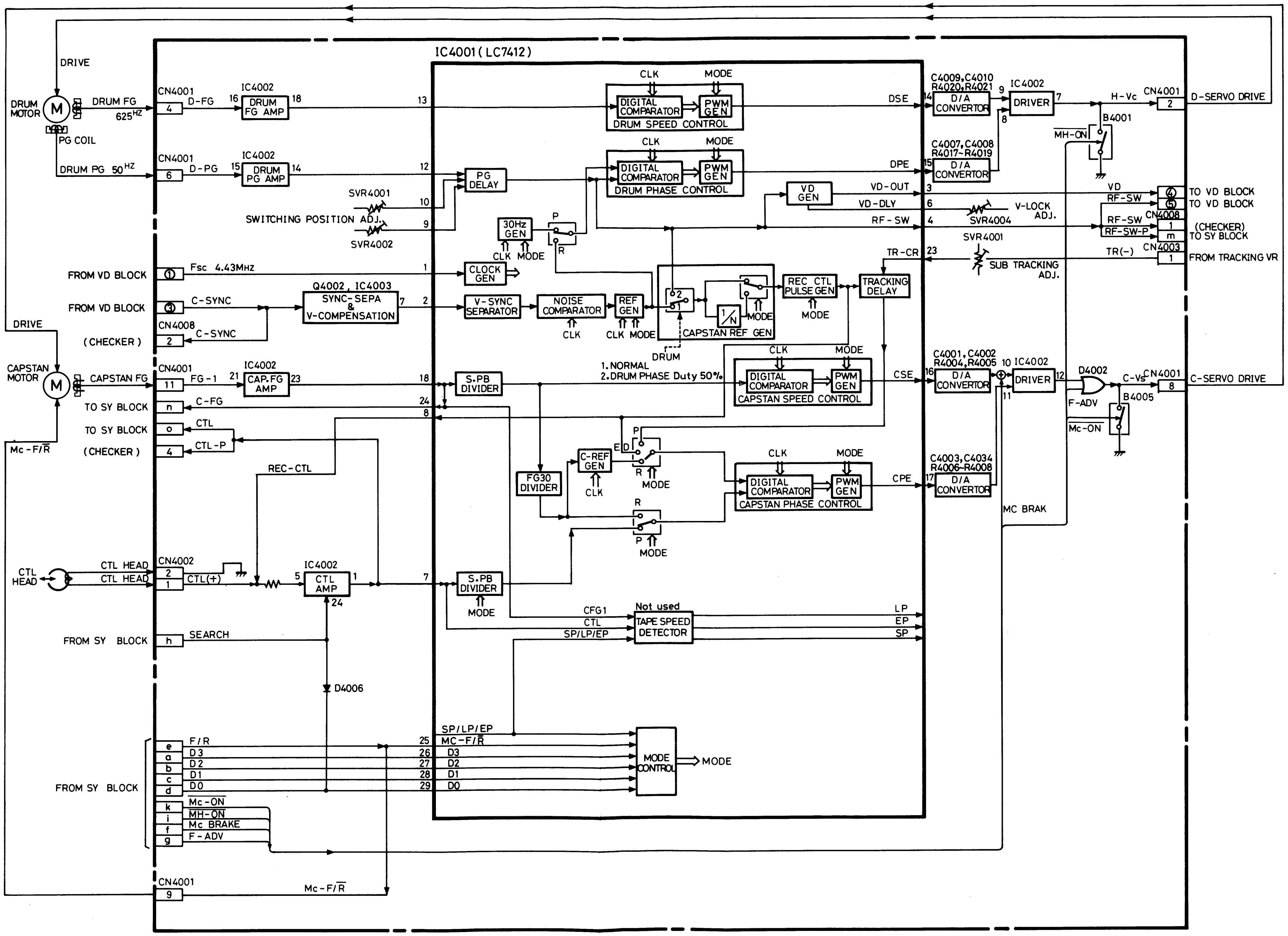
Timer und Abstimmungssteuerung-Blockdarstellung
Timer and Tuning Control Block Diagram

***UK Version**

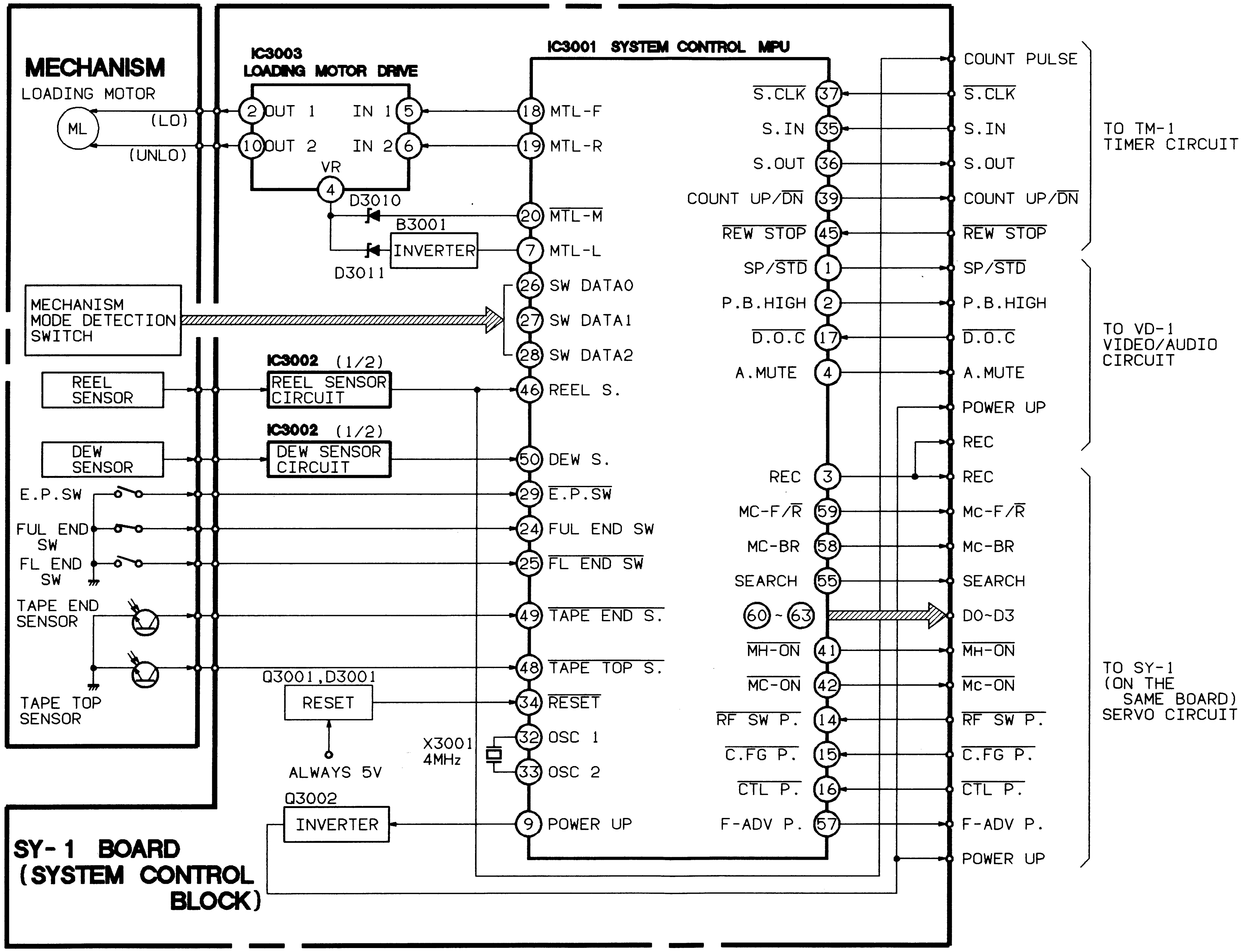
***UK stands for United Kingdom**


TM-4 BOARD
TM-1 BOARD
TM-5 BOARD
D7403
D7402
ALWAYS 5V
C7014
BACK UP CAPACITOR
IC7403
RESET
IC7401
TIMER/CH. PRESET MPU
S7414
ALL CLEAR
TP7401
TIMING
IC7402 EAROM
ALWAYS 5V
Vss
ALWAYS -30V
VGG
CH. PRESET DATA MEMORY
GND
CS
I/O
CLK
C1
C2
C3
EAROM I/O
A7402
IR RECEIVER UNIT
IR REMOTE
12G 11G 10G 9G 8G 7G 6G 5G 4G 3G 2G 1G
PRG VTR DEW VPS
2W EW ON OFF AM PM
SU MO TU WE TH FR SA ERR P. AFT
QSR
R .M 1 2 3 4
A7401
FLUORESCENT DISPLAY
BACK UP 5V
Vcc
ALWAYS -30V
VPP
ALWAYS 5V (PULL UP)
POWER DOWN
CN Vss
Vss
SEGMENT SIGNAL OUTPUT
8
GRID SIGNAL OUTPUT AND K.SCAN OUTPUT
11
CN7105
AC 4.5V
AC 4.5V
ALWAYS 5.6V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DN
REW STOP
S.IN
S.CLK
S.OUT
TO SY-1 (SYSTEM CONTROL)
IC7103
33V REGULATOR
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DOWN
REW STOP
S.IN
S.CLK
S.OUT
S7401-S7426, S7429, S7430
KEY MATRIX
K.SCAN INPUT
4
B7404
SWITCHING
EXT L
X7101
500kHz OSC
ALWAYS 12V
Q7103, Q7104
SWITCHING
STB 12V
12V
Vcc
NC
VCO 32fH
SYNC SEP.
AFC
1/32 COUNT DOWN
AFT WINDOW COMPARATOR
AND
AMP
COMPARATOR
GATE
GND
IC7101
SYNC SEPARATOR/ SYNC DETECTOR
Q7101
BUFFER
TUNER ON
X7401
32kHz OSC
XC IN
XC OUT
X7402
4.19MHz OSC
X IN
X OUT
KEY IN 2
S7003
TIMER SW
G3
AFT 2
AFT 1
CN7107
VIDEO IN
AFT S
LB
HB
UB
TU
AUDIO MUTE
AFT SWITCH
ALWAYS 12V
GND
TO VD-1 (TUNER)
IC7102
BAND SELECTOR
LB
HB
UB
BAND 1
BAND 2
POWER SW
EJECT SW
S7002
POWER SW
S7001
EJECT SW
R7117-R7119
C7108, C7109
Q7102
L.P.F
BUFFER AMP
PWM
AUDIO MUTE
AFT MUTE
SCL
SDA
ALWAYS 12V

Servo-Blockdarstellung
Servo Block Diagram

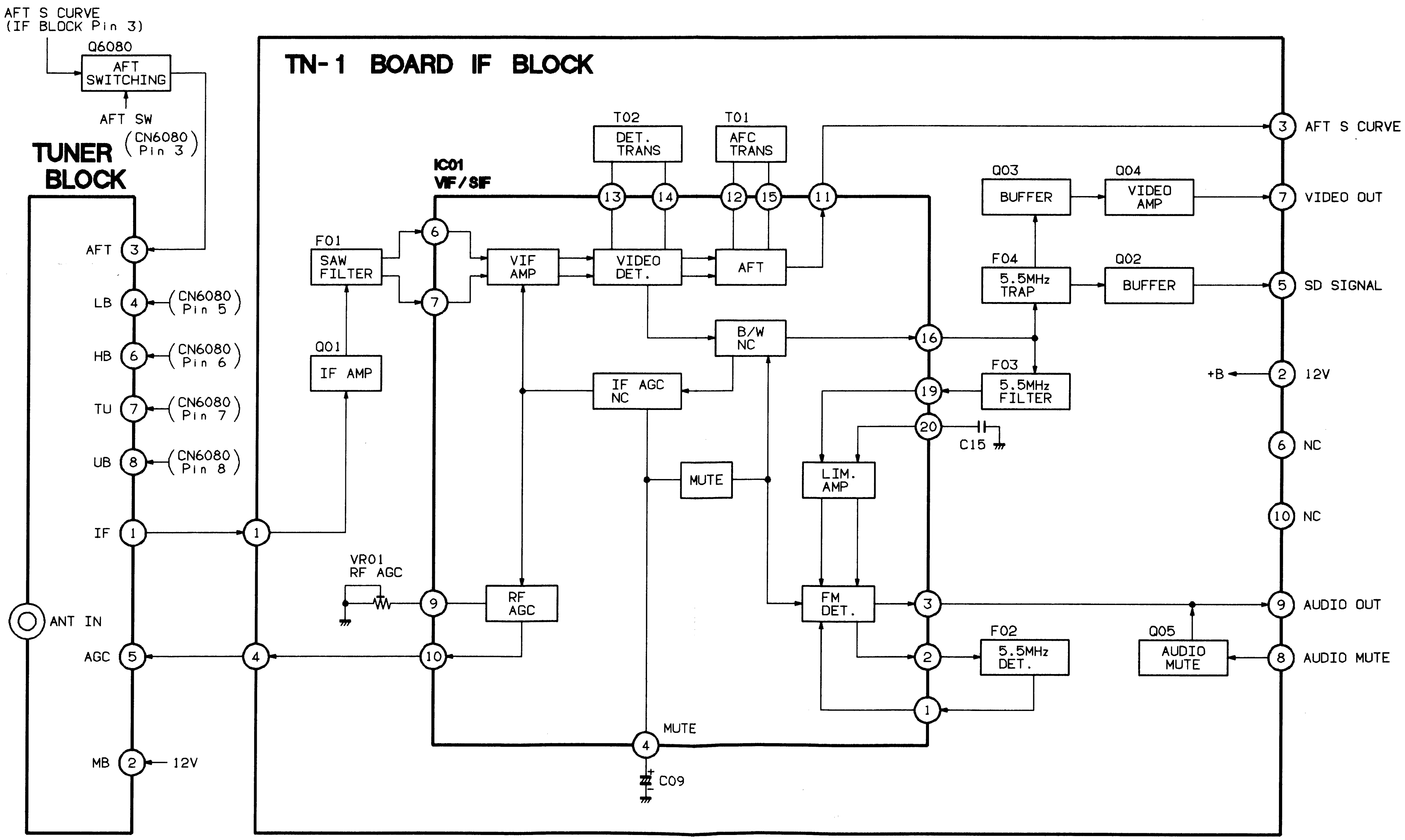

IC4001 (LC7412)
DRIVE
DRUM MOTOR
M
DRUM FG
625HZ
PG COIL
DRUM PG 50HZ
CN4001
4
D-FG
IC4002
16
DRUM FG AMP
18
13
6
D-PG
15
DRUM PG AMP
14
12
SVR4001
10
SWITCHING POSITION ADJ.
9
SVR4002
PG DELAY
CLK
MODE
DIGITAL COMPARATOR
PWM GEN
DRUM SPEED CONTROL
DSE
DRUM PHASE CONTROL
DPE
VD GEN
VD-OUT
VD-DLY
RF-SW
30Hz GEN
P
R
CLOCK GEN
FROM VD BLOCK
Fsc 4.43MHz
1
Q4002, IC4003
SYNC-SEPA & V-COMPENSATION
7
2
C-SYNC
V-SYNC SEPARATOR
NOISE COMPARATOR
REF GEN
CAPSTAN REF GEN
1/N
REC CTL PULSE GEN
TRACKING DELAY
TR-CR
23
CN4008
(CHECKER)
C-SYNC
DRUM
1. NORMAL
2. DRUM PHASE Duty 50%
CAPSTAN MOTOR
CAPSTAN FG
11
FG-1
21
CAP.FG AMP
23
18
S.PB DIVIDER
CAPSTAN SPEED CONTROL
CSE
TO SY BLOCK
n
C-FG
24
8
o
CTL
4
CTL-P
Mc-F/R
REC-CTL
C-REF GEN
E
D
FG30 DIVIDER
CAPSTAN PHASE CONTROL
CPE
CTL HEAD
CN4002
2
1
CTL(+)
5
CTL AMP
24
7
S.PB DIVIDER
CFG1
CTL
SP/LP/EP
Not used
TAPE SPEED DETECTOR
LP
EP
SP
FROM SY BLOCK
h
SEARCH
D4006
e
a
b
c
d
F/R
D3
D2
D1
D0
25
26
27
28
29
MC-F/R
MODE CONTROL
MODE
k
i
f
g
Mc-ON
MH-ON
Mc BRAKE
F-ADV
CN4001
9
Mc-F/R
C4009, C4010
R4020, R4021
D/A CONVERTOR
DRIVER
H-Vc
D-SERVO DRIVE
B4001
MH-ON
C4007, C4008
R4017~R4019
V-LOCK ADJ.
SVR4004
TO VD BLOCK
VD
RF-SW
RF-SW-P
(CHECKER)
TO SY BLOCK
SVR4001
SUB TRACKING ADJ.
TR(-)
CN4003
FROM TRACKING VR
C4001, C4002
R4004, R4005
10
12
D4002
C-Vs
C-SERVO DRIVE
B4005
F-ADV
Mc-ON
C4003, C4034
R4006~R4008
MC BRAK

Ablaufsteuerung-Blockdarstellung
System Control Block Diagram


MECHANISM
LOADING MOTOR
ML
(LO)
(UNLO)
IC3003
LOADING MOTOR DRIVE
2 OUT 1
IN 1 5
10 OUT 2
IN 2 6
VR
4
D3010
B3001
INVERTER
D3011
MECHANISM MODE DETECTION SWITCH
REEL SENSOR
IC3002 (1/2)
REEL SENSOR CIRCUIT
DEW SENSOR
IC3002 (1/2)
DEW SENSOR CIRCUIT
E.P.SW
FUL END SW
FL END SW
TAPE END SENSOR
TAPE TOP SENSOR
Q3001,D3001
RESET
ALWAYS 5V
X3001 4MHz
Q3002
INVERTER
SY-1 BOARD (SYSTEM CONTROL BLOCK)
IC3001 SYSTEM CONTROL MPU
18 MTL-F
19 MTL-R
20 MTL-M
7 MTL-L
26 SW DATA0
27 SW DATA1
28 SW DATA2
46 REEL S.
50 DEW S.
29 E.P.SW
24 FUL END SW
25 FL END SW
49 TAPE END S.
48 TAPE TOP S.
34 RESET
32 OSC 1
33 OSC 2
9 POWER UP
S.CLK 37
S.IN 35
S.OUT 36
COUNT UP/DN 39
REW STOP 45
SP/STD 1
P.B.HIGH 2
D.O.C 17
A.MUTE 4
REC 3
MC-F/R 59
MC-BR 58
SEARCH 55
60 ~ 63
MH-ON 41
MC-ON 42
RF SW P. 14
C.FG P. 15
CTL P. 16
F-ADV P. 57
COUNT PULSE
S.CLK
S.IN
S.OUT
COUNT UP/DN
REW STOP
TO TM-1 TIMER CIRCUIT
SP/STD
P.B.HIGH
D.O.C
A.MUTE
POWER UP
REC
TO VD-1 VIDEO/AUDIO CIRCUIT
REC
MC-F/R
MC-BR
SEARCH
D0~D3
MH-ON
MC-ON
RF SW P.
C.FG P.
CTL P.
F-ADV P.
POWER UP
TO SY-1 (ON THE SAME BOARD) SERVO CIRCUIT

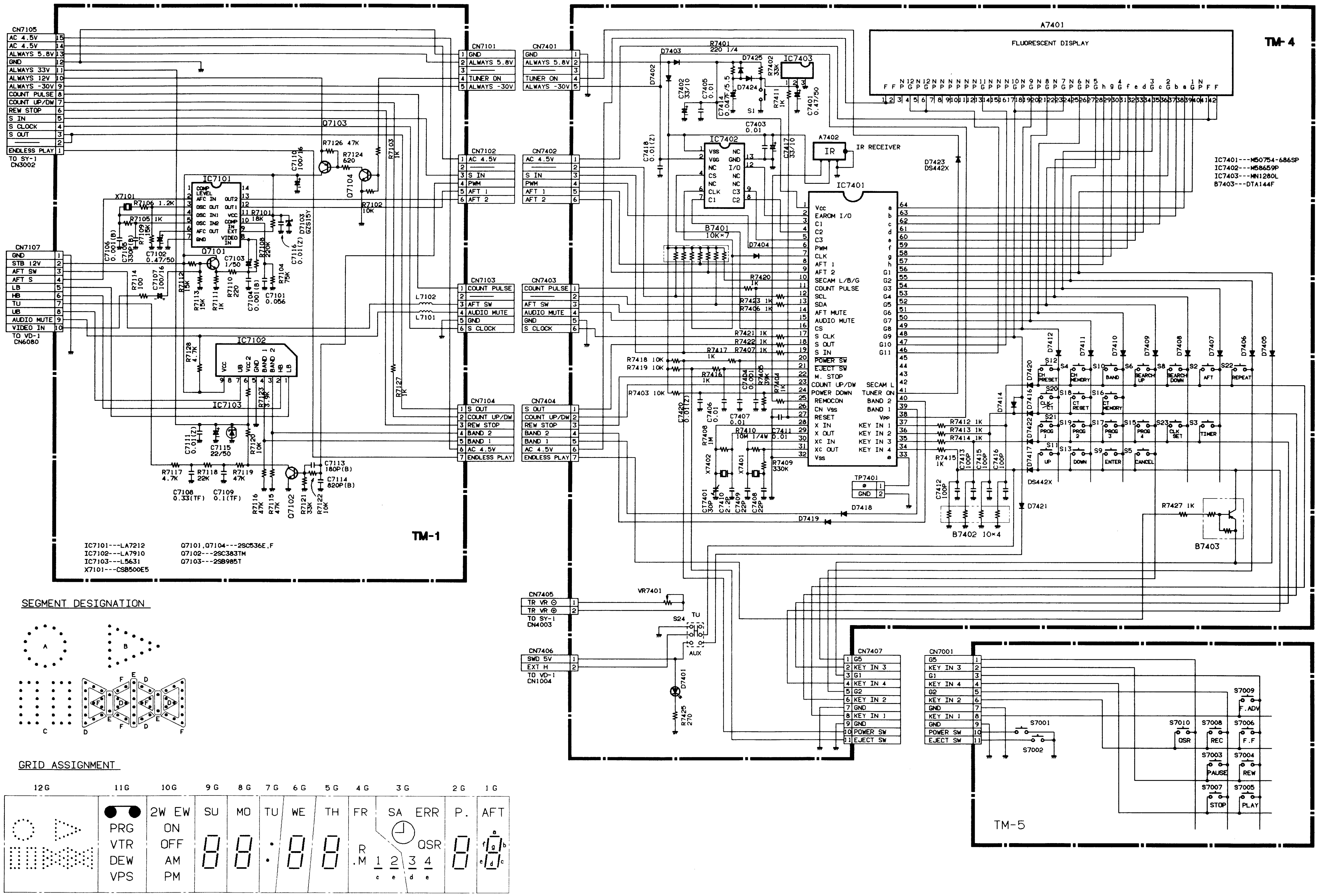
Tuner/ZF-Blockdarstellung
Tuner/IF Block Diagram

German-Version


AFT S CURVE
(IF BLOCK Pin 3)
Q6080
AFT SWITCHING
AFT SW
(CN6080 Pin 3)
TUNER BLOCK
AFT 3
LB 4 (CN6080 Pin 5)
HB 6 (CN6080 Pin 6)
TU 7 (CN6080 Pin 7)
UB 8 (CN6080 Pin 8)
IF 1
ANT IN
AGC 5
MB 2 12V
TN-1 BOARD IF BLOCK
IC01 VIF/SIF
F01 SAW FILTER
Q01 IF AMP
VR01 RF AGC
VIF AMP
RF AGC
T02 DET. TRANS
T01 AFC TRANS
VIDEO DET.
AFT
B/W NC
IF AGC NC
MUTE
LIM. AMP
FM DET.
MUTE
C09
C15
Q03 BUFFER
Q04 VIDEO AMP
F04 5.5MHz TRAP
Q02 BUFFER
F03 5.5MHz FILTER
F02 5.5MHz DET.
Q05 AUDIO MUTE
1
4
6
7
9
10
13
14
12
15
11
16
19
20
3
2
1
4
3 AFT S CURVE
7 VIDEO OUT
5 SD SIGNAL
+B 2 12V
6 NC
10 NC
9 AUDIO OUT
8 AUDIO MUTE

TM-1, 4, 5 Timer, Display & Abstimmspannungserzeugung-Schaltung
TM-1, 4, 5 Timer, Display & Tuning Control Schematic Diagram

*UK Version



CN7105
AC 4.5V
AC 4.5V
ALWAYS 5.8V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DW
REW STOP
S IN
S CLOCK
S OUT
ENDLESS PLAY
TO SY-1 CN3002
CN7107
GND
STB 12V
AFT SW
AFT S
LB
HB
TU
UB
AUDIO MUTE
VIDEO IN
TO VD-1 CN6080
IC7101
IC7102
IC7103
Q7101
Q7103
X7101
CN7101
CN7102
CN7103
CN7104
CN7401
CN7402
CN7403
CN7404
TM-1
IC7101---LA7212
IC7102---LA7910
IC7103---L5631
X7101---CSB500E5
Q7101,Q7104---2SC536E,F
Q7102---2SC383TM
Q7103---2SB985T
A7401
FLUORESCENT DISPLAY
TM-4
IC7401
IC7402
IC7403
A7402
IR RECEIVER
IC7401---M50754-686SP
IC7402---M58659P
IC7403---MN1280L
B7403---DTA144F
B7401 10K×7
B7402 10×4
B7403
D7423 DS442X
DS442X
TP7401
CN7405
TR VR ⊖
TR VR ⊕
TO SY-1 CN4003
CN7406
SWD 5V
EXT H
TO VD-1 CN1004
VR7401
S24
TU
AUX
CN7407
G5
KEY IN 3
G1
KEY IN 4
G2
KEY IN 2
GND
KEY IN 1
GND
POWER SW
EJECT SW
CN7001
TM-5
S7001
S7002
S7003 PAUSE
S7004 REW
S7005 PLAY
S7006 F.F
S7007 STOP
S7008 REC
S7009 F.ADV
S7010 QSR
PRESET
MEMORY
BAND
SEARCH UP
SEARCH DOWN
AFT
REPEAT
CT RESET
CT MEMORY
PROG 1
PROG 2
PROG 3
PROG 4
CLK SET
TIMER
UP
DOWN
ENTER
CANCEL

SEGMENT DESIGNATION

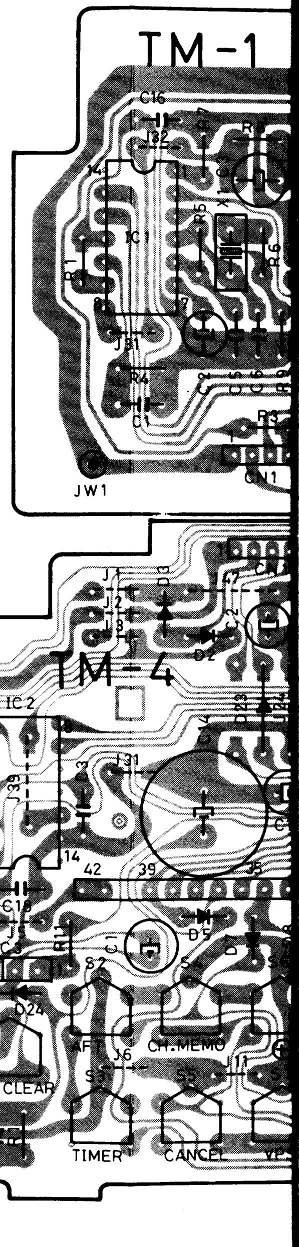
A
B
C
D
E
F

GRID ASSIGNMENT

12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
PRG
VTR
DEW
VPS
2W EW
ON
OFF
AM
PM
SU
MO
TU
WE
TH
FR
SA
ERR
P.
AFT
QSR
R
.M
1
2
3
4

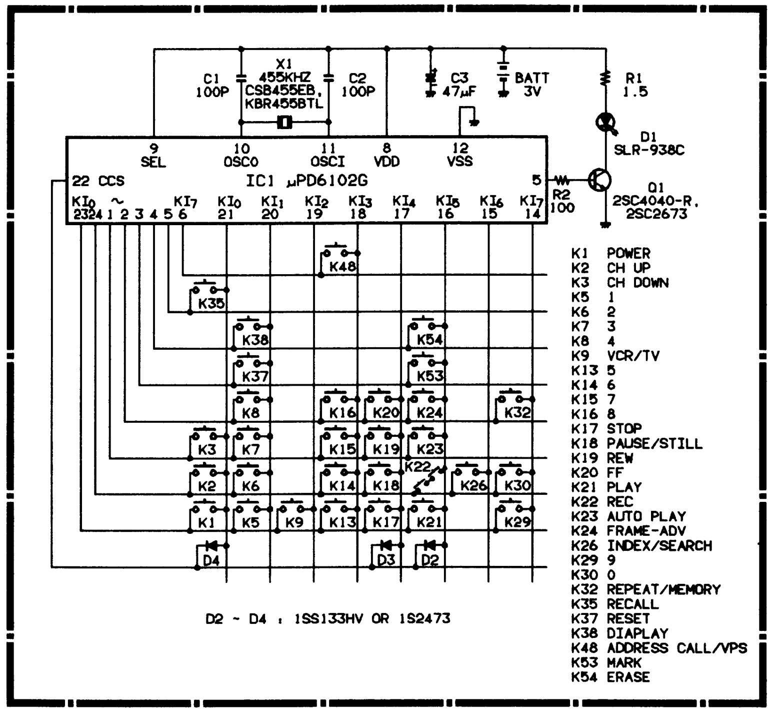
TM-1, 4, 5 Tim

TM-1, 4, 5 Tim

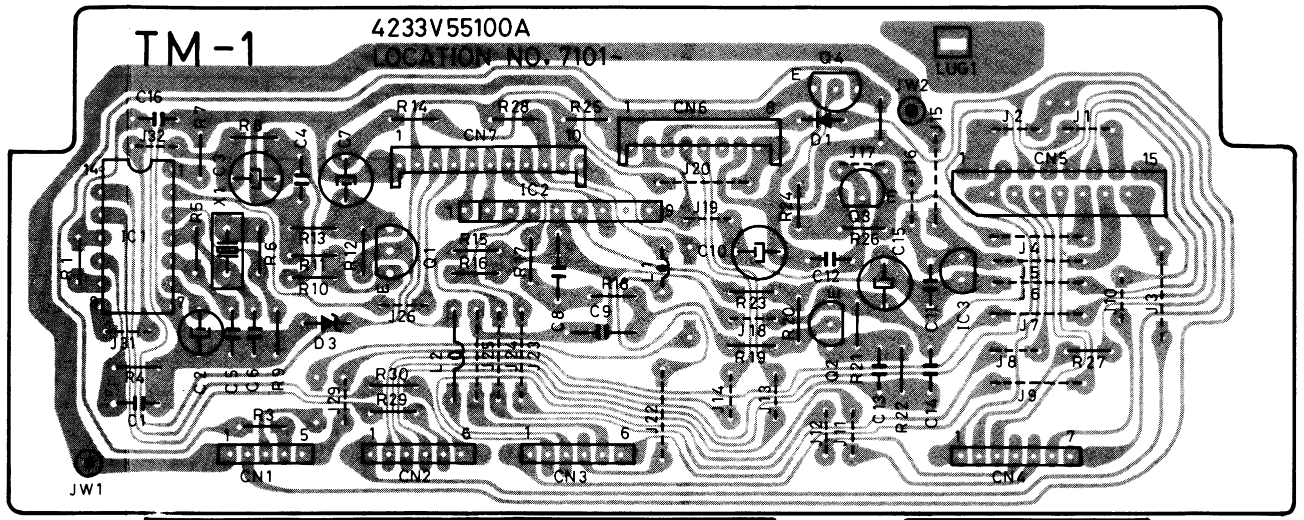


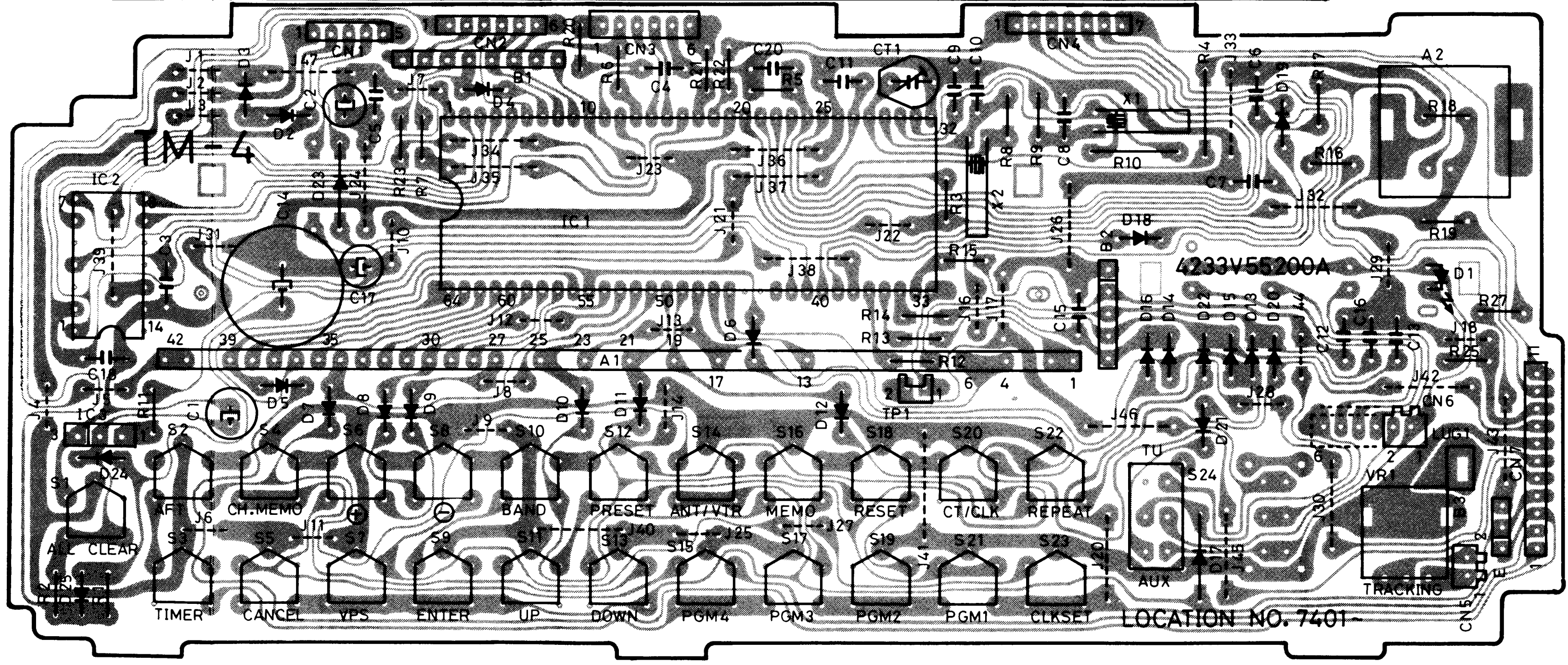
TM-1
JW1
TM-4
TIMER
CANCEL
ALL CLEAR
CH.MEMO

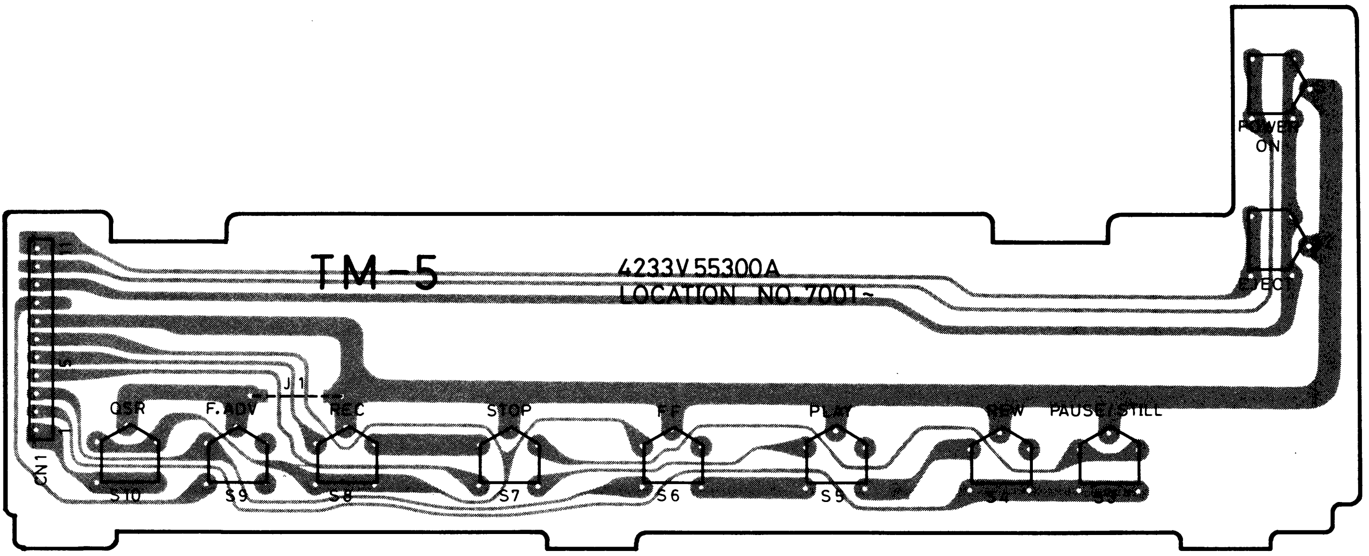
Fernbedienung
Remote Control Unit


X1
455KHZ
CSB455EB,
KBR455BTL
C1
100P
C2
100P
C3
47µF
BATT
3V
R1
1.5
D1
SLR-938C
9
SEL
10
OSCO
11
OSCI
8
VDD
12
VSS
22 CCS
IC1 µPD6102G
5
R2
100
Q1
2SC4040-R,
2SC2673
KI0 ~ KI7 KI0 KI1 KI2 KI3 KI4 KI5 KI6 KI7
2324 1 2 3 4 5 6 21 20 19 18 17 16 15 14
K48
K35
K38
K54
K37
K53
K8
K16
K20
K24
K32
K3
K7
K15
K19
K23
K2
K6
K14
K18
K22
K26
K30
K1
K5
K9
K13
K17
K21
K29
D4
D3
D2
D2 ~ D4 : 1SS133HV OR 1S2473
K1 POWER
K2 CH UP
K3 CH DOWN
K5 1
K6 2
K7 3
K8 4
K9 VCR/TV
K13 5
K14 6
K15 7
K16 8
K17 STOP
K18 PAUSE/STILL
K19 REW
K20 FF
K21 PLAY
K22 REC
K23 AUTO PLAY
K24 FRAME-ADV
K26 INDEX/SEARCH
K29 9
K30 0
K32 REPEAT/MEMORY
K35 RECALL
K37 RESET
K38 DIAPLAY
K48 ADDRESS CALL/VPS
K53 MARK
K54 ERASE

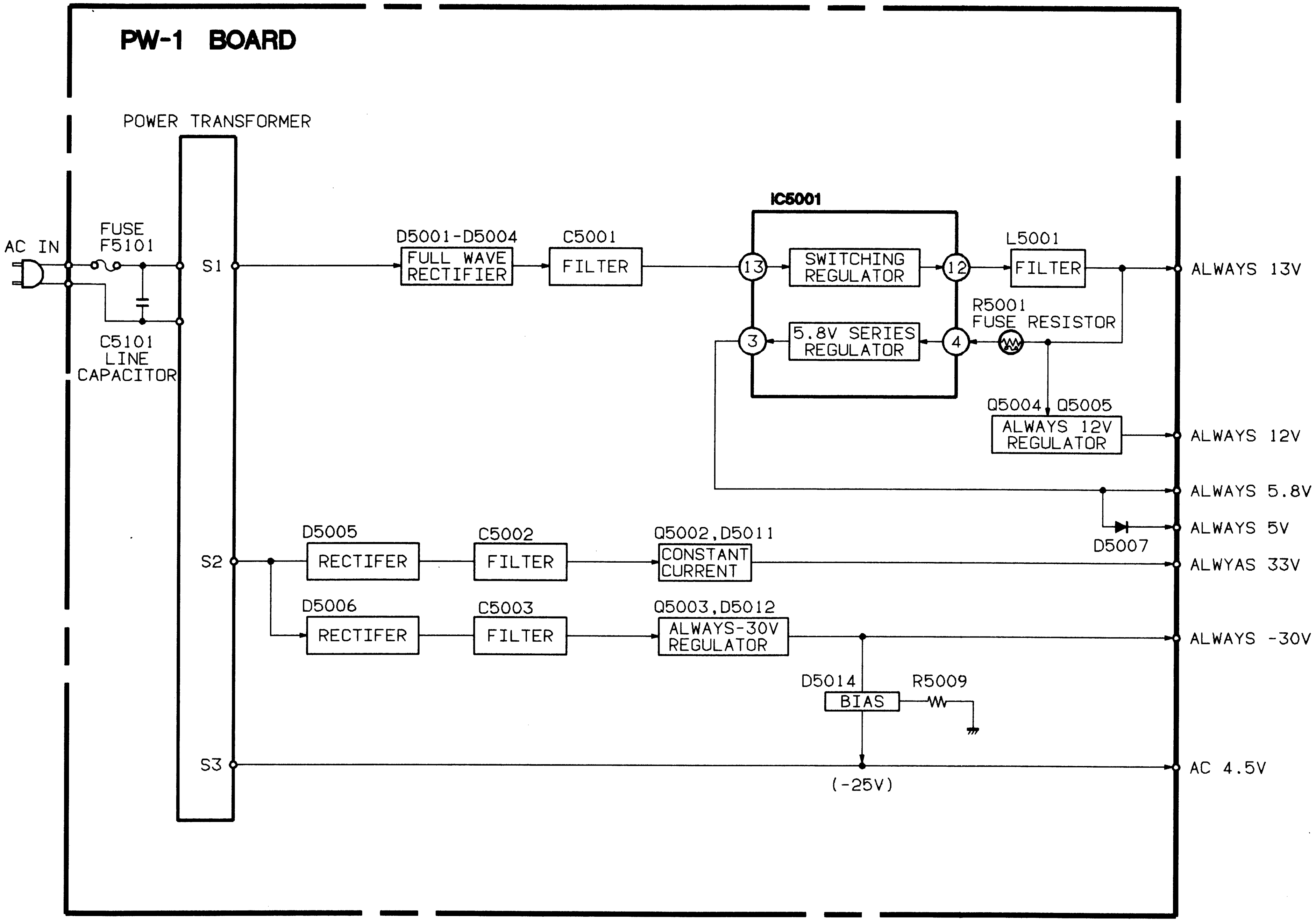
TM-1, 4, 5 Timer, Display & Abstimmspannungserzeugung-Platte
TM-1, 4, 5 Timer, Display & Tuning Control Circuit Board


TM-1
4233V55100A
LOCATION NO. 7101-
LUG1
JW1
JW2
Q4
IC1
IC2
IC3
CN1
CN2
CN3
CN4
CN5
CN6
CN7
D1
D3
Q1
Q2
Q3

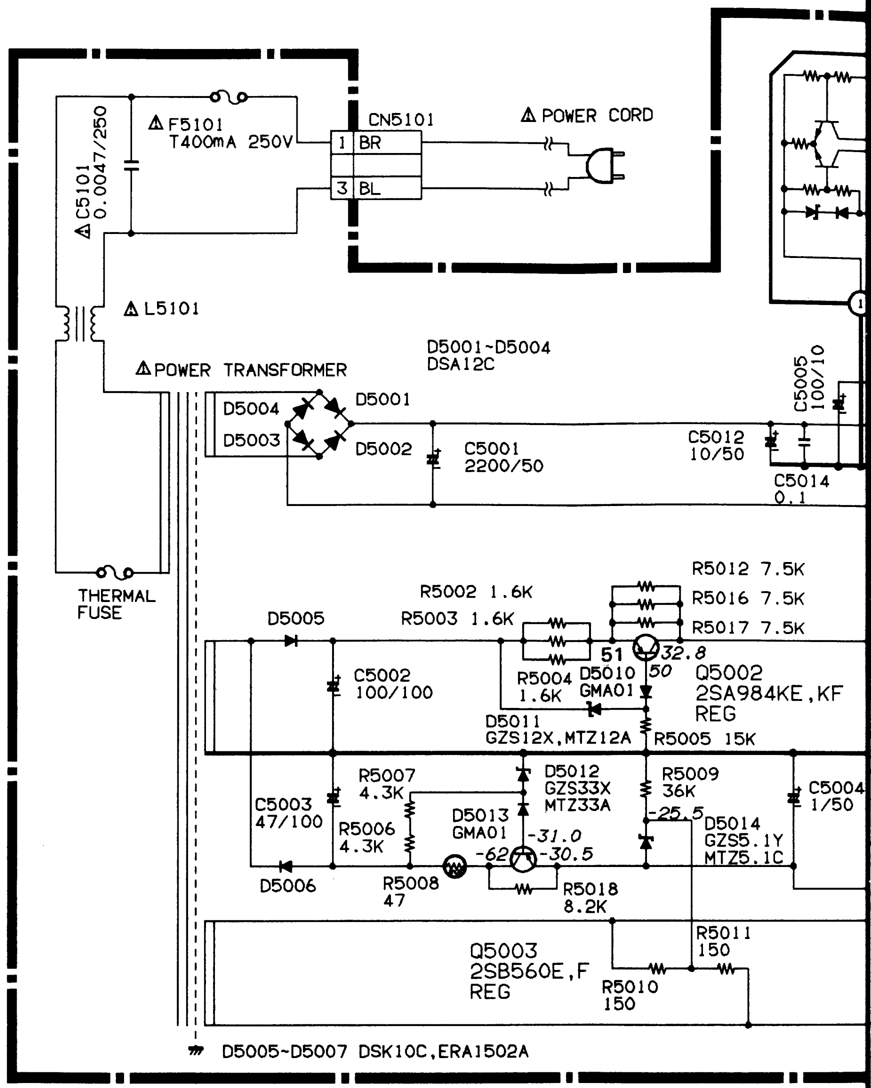

TM-4
4233V55200A
LOCATION NO. 7401-
IC1
IC2
A1
A2
CT1
X1
TP1
VR1
TU
CN2
CN3
CN4
CN5
CN6
AFT
CH.MEMO
BAND
PRESET
ANT/VTR
MEMO
RESET
CT/CLK
REPEAT
A.F.CLEAR
TIMER
CANCEL
VPS
ENTER
UP
DOWN
PGM4
PGM3
PGM2
PGM1
CLKSET
AUX
TRACKING


TM-5
4233V55300A
LOCATION NO. 7001-
CN1
POWER ON
EJECT
OSR
F.ADV
REC
STOP
FF
PLAY
REW
PAUSE/STILL
S10
S9
S8
S7
S6
S5
S4
S3

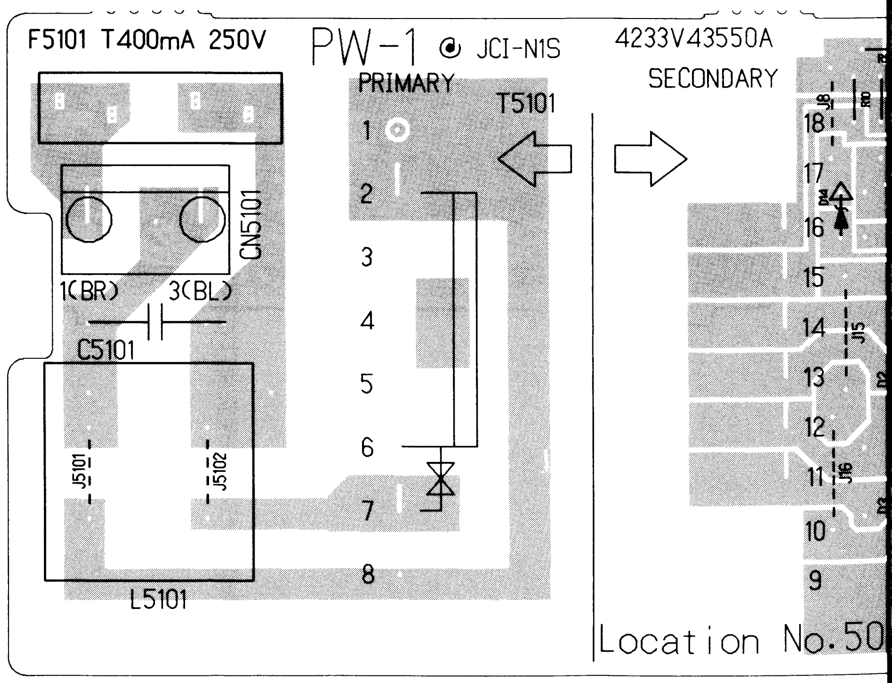
Netzteil-Blockdarstellung
Power Supply Block Diagram



PW-1 BOARD
POWER TRANSFORMER
AC IN
FUSE
F5101
C5101
LINE
CAPACITOR
S1
S2
S3
D5001-D5004
FULL WAVE
RECTIFIER
C5001
FILTER
IC5001
13
SWITCHING
REGULATOR
12
L5001
FILTER
3
5.8V SERIES
REGULATOR
4
R5001
FUSE RESISTOR
Q5004, Q5005
ALWAYS 12V
REGULATOR
D5007
D5005
RECTIFER
C5002
FILTER
Q5002, D5011
CONSTANT
CURRENT
D5006
RECTIFER
C5003
FILTER
Q5003, D5012
ALWAYS-30V
REGULATOR
D5014
BIAS
R5009
(-25V)
ALWAYS 13V
ALWAYS 12V
ALWAYS 5.8V
ALWAYS 5V
ALWYAS 33V
ALWAYS -30V
AC 4.5V

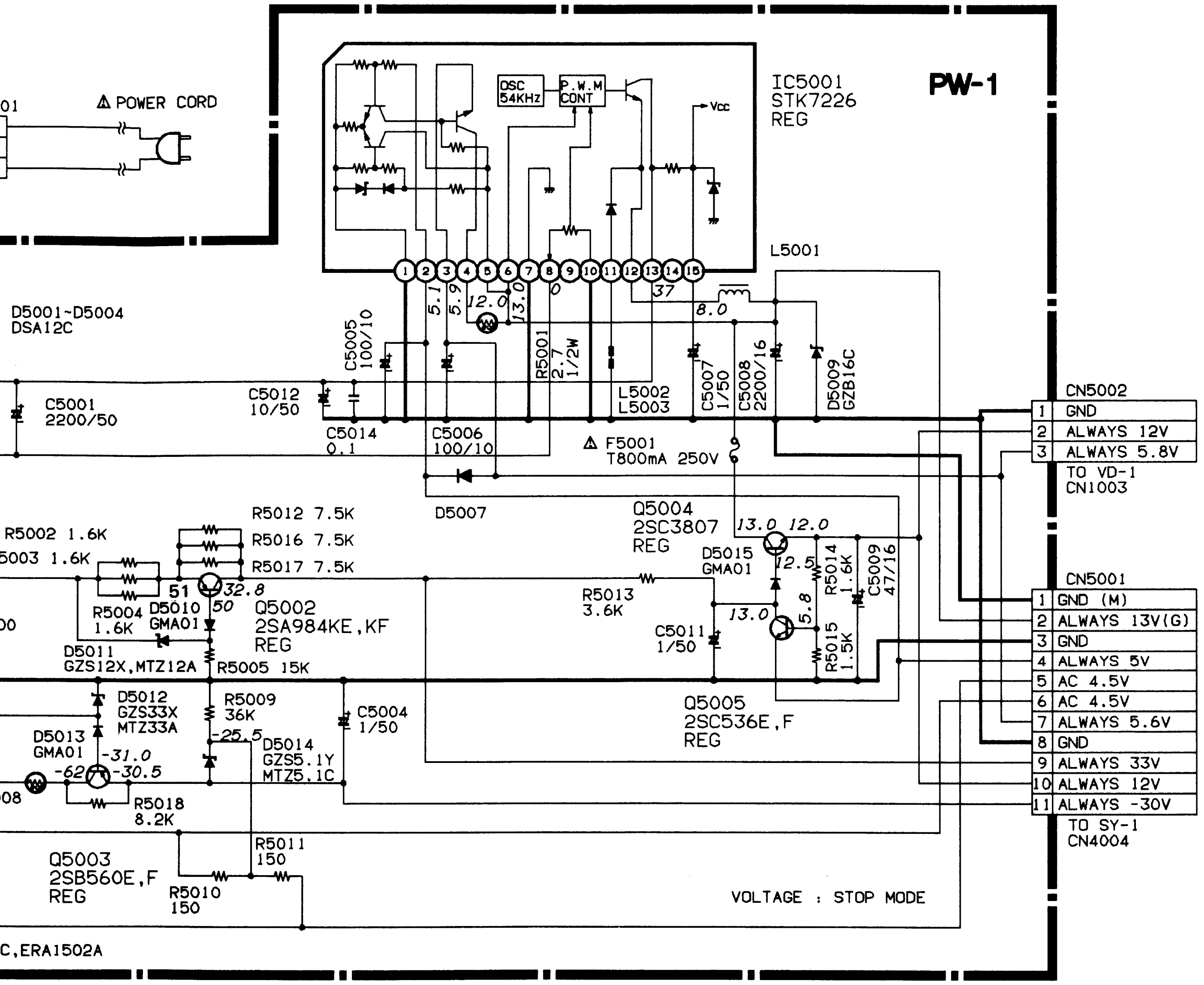


⚠ F5101
T400mA 250V
CN5101
1 BR
3 BL
⚠ POWER CORD
⚠ C5101
0.0047/250
⚠ L5101
⚠ POWER TRANSFORMER
D5001~D5004
DSA12C
D5004
D5003
D5001
D5002
C5001
2200/50
C5012
10/50
C5005
100/10
C5014
0.1
THERMAL
FUSE
R5002 1.6K
R5003 1.6K
R5012 7.5K
R5016 7.5K
R5017 7.5K
D5005
C5002
100/100
R5004
1.6K
D5010
GMA01
51
32.8
50
Q5002
2SA984KE,KF
REG
D5011
GZS12X,MTZ12A
R5005 15K
R5007
4.3K
D5012
GZS33X
MTZ33A
R5009
36K
C5004
1/50
C5003
47/100
R5006
4.3K
D5013
GMA01
-31.0
-62
-30.5
-25.5
D5014
GZS5.1Y
MTZ5.1C
D5006
R5008
47
R5018
8.2K
Q5003
2SB560E,F
REG
R5011
150
R5010
150
D5005~D5007 DSK10C,ERA1502A

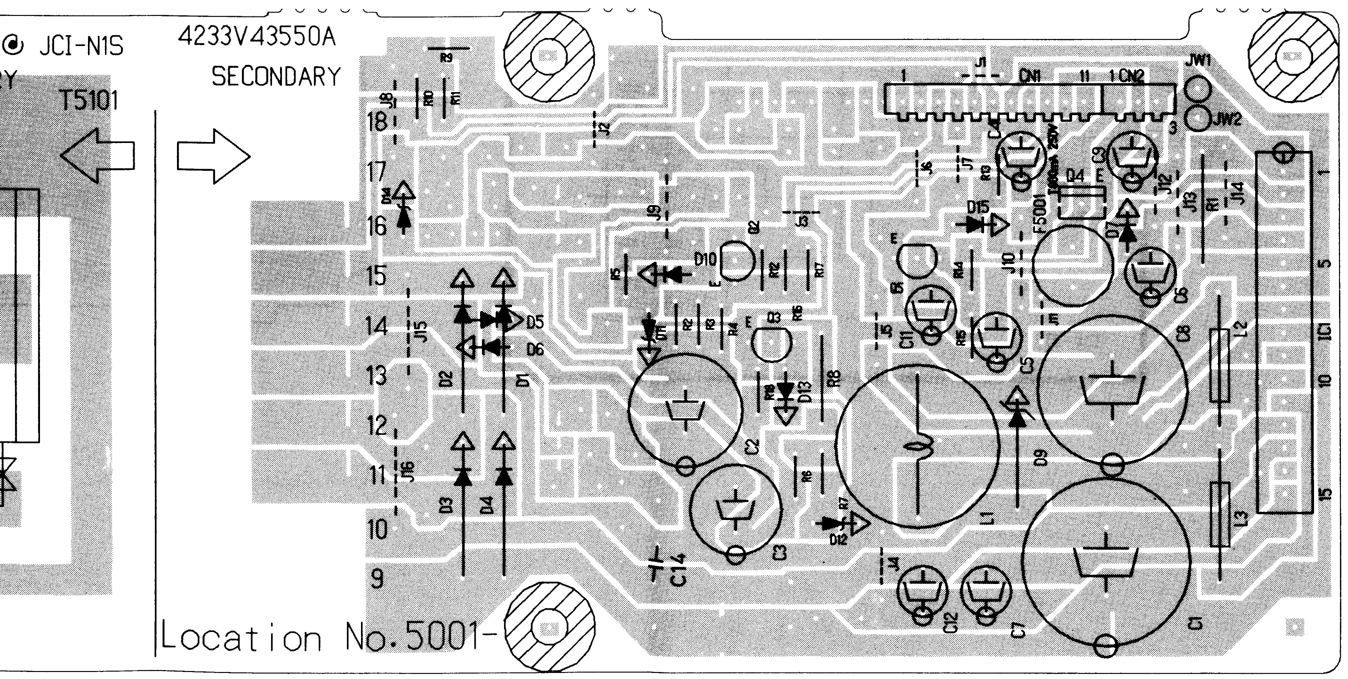


F5101 T400mA 250V
PW-1
JCI-N1S
4233V43550A
PRIMARY
SECONDARY
T5101
CN5101
1(BR)
3(BL)
C5101
J5101
J5102
L5101
1
2
3
4
5
6
7
8
18
17
16
15
14
13
12
11
10
9
J8
J15
J16
D14
Location No.50

PW-1 Netzteil-Schaltung
PW-1 Power Supply Schematic Diagram


PW-1
IC5001
STK7226
REG
OSC
54KHZ
P.W.M
CONT
Vcc
⚠ POWER CORD
L5001
D5001~D5004
DSA12C
C5001
2200/50
C5012
10/50
C5014
0.1
C5005
100/10
C5006
100/10
R5001
2.7
1/2W
L5002
L5003
C5007
1/50
C5008
2200/16
D5009
GZB16C
⚠ F5001
T800mA 250V
D5007
5.1
5.9
12.0
13.0
0
37
8.0
CN5002
1 GND
2 ALWAYS 12V
3 ALWAYS 5.8V
TO VD-1
CN1003
R5012 7.5K
R5016 7.5K
R5017 7.5K
R5002 1.6K
R5003 1.6K
R5004 1.6K
D5010 GMA01
51
32.8
50
Q5002
2SA984KE,KF
REG
D5011
GZS12X,MTZ12A
R5005 15K
Q5004
2SC3807
REG
13.0
12.0
D5015
GMA01
12.5
R5013
3.6K
C5011
1/50
13.0
5.8
R5014
1.6K
R5015
1.5K
C5009
47/16
Q5005
2SC536E,F
REG
CN5001
1 GND (M)
2 ALWAYS 13V(G)
3 GND
4 ALWAYS 5V
5 AC 4.5V
6 AC 4.5V
7 ALWAYS 5.6V
8 GND
9 ALWAYS 33V
10 ALWAYS 12V
11 ALWAYS -30V
TO SY-1
CN4004
D5012
GZS33X
MTZ33A
R5009
36K
-25.5
C5004
1/50
D5013
GMA01
-31.0
-62
-30.5
D5014
GZS5.1Y
MTZ5.1C
R5018
8.2K
Q5003
2SB560E,F
REG
R5011
150
R5010
150
VOLTAGE : STOP MODE
C,ERA1502A

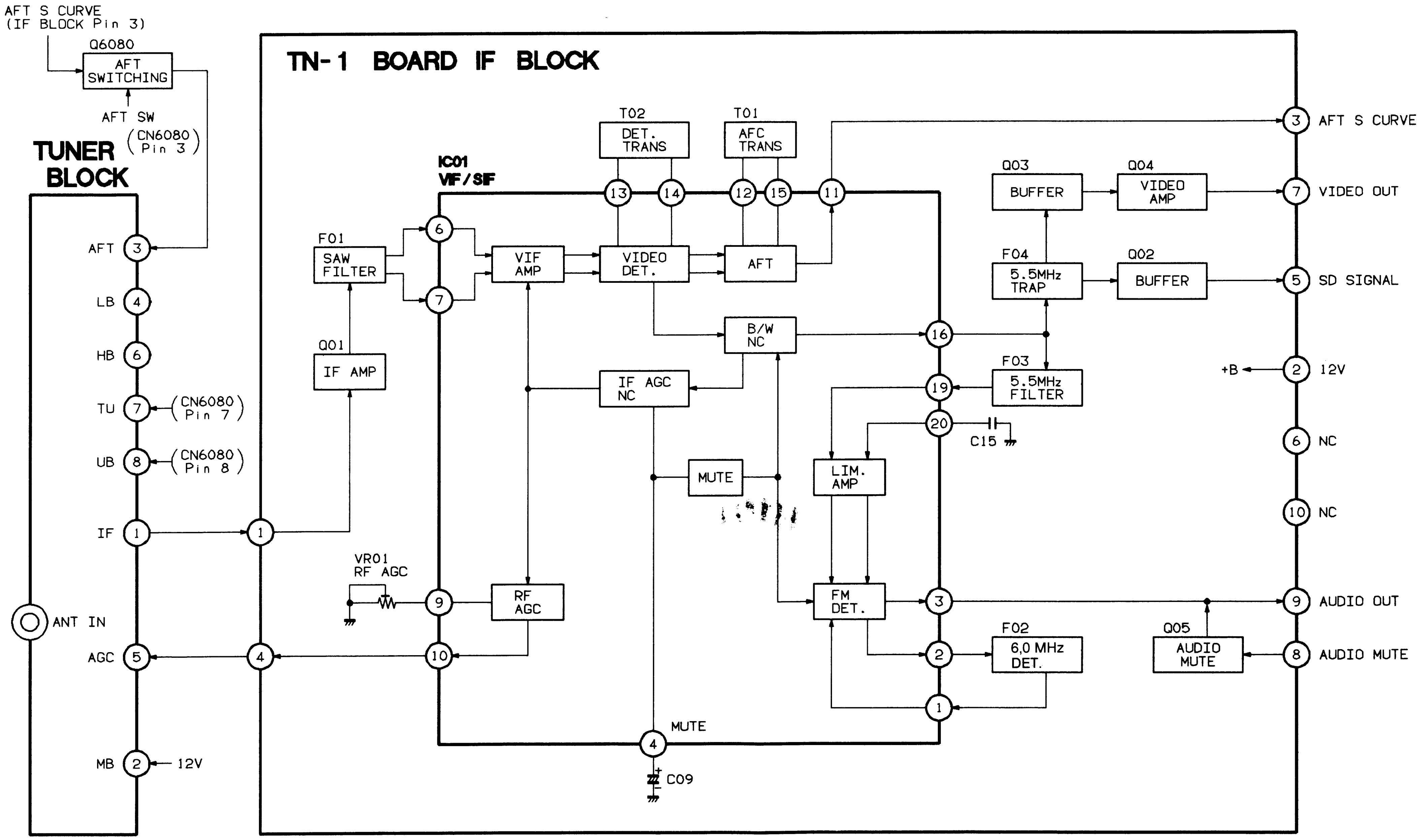
PW-1 Netzteil-Platte
PW-1 Power Supply Circuit Board


JCI-N1S
T5101
4233V43550A
SECONDARY
CN1
CN2
JW1
JW2
IC1
F5001
D5
D6
D10
D12
D13
D15
C1
C2
C3
C5
C7
C8
C9
C12
C14
L1
L2
L3
Location No.5001-

Tuner/ZF-Blockdarstellung
Tuner/IF Block Diagram

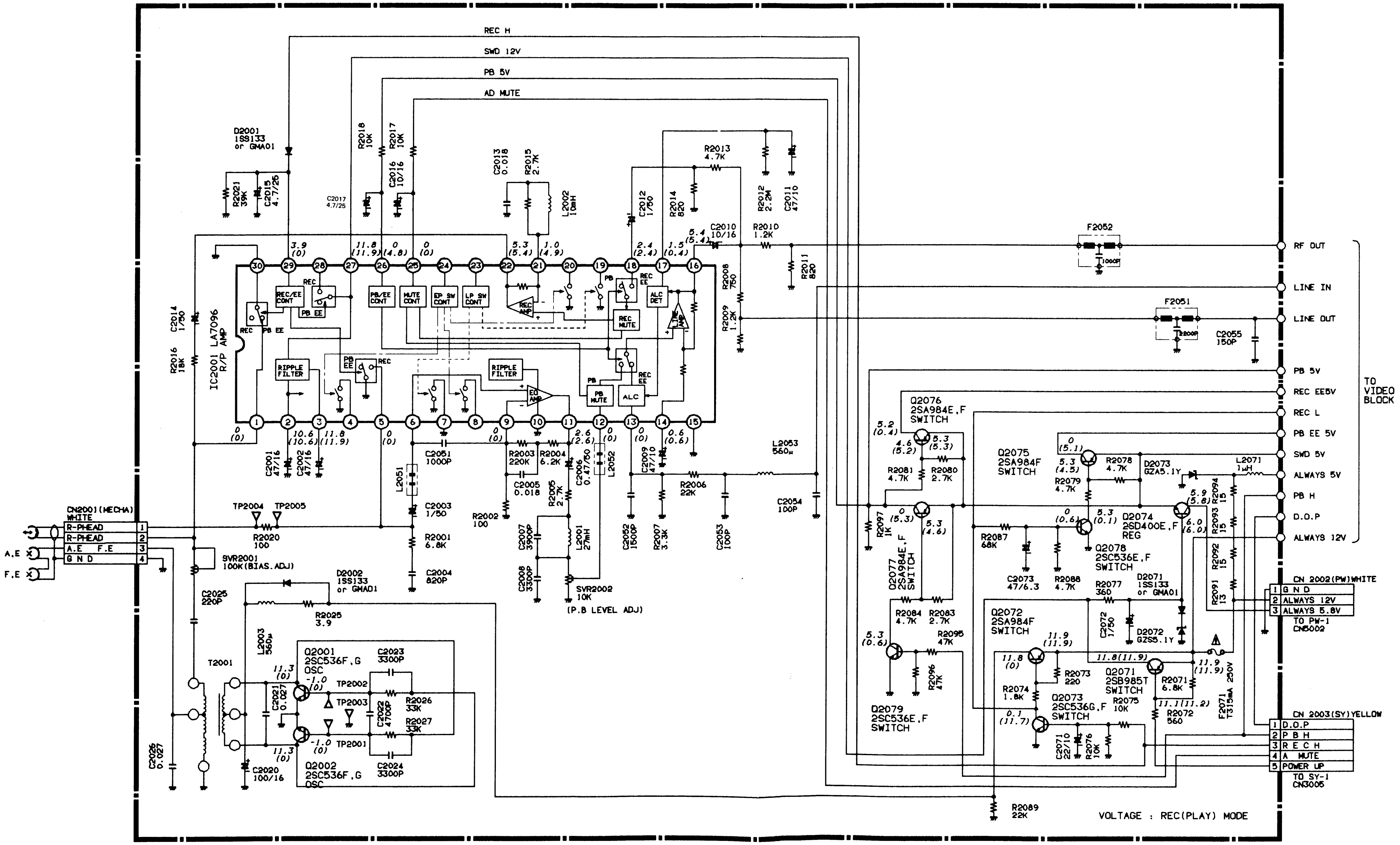
***UK Version**

***UK stands for United Kingdom**

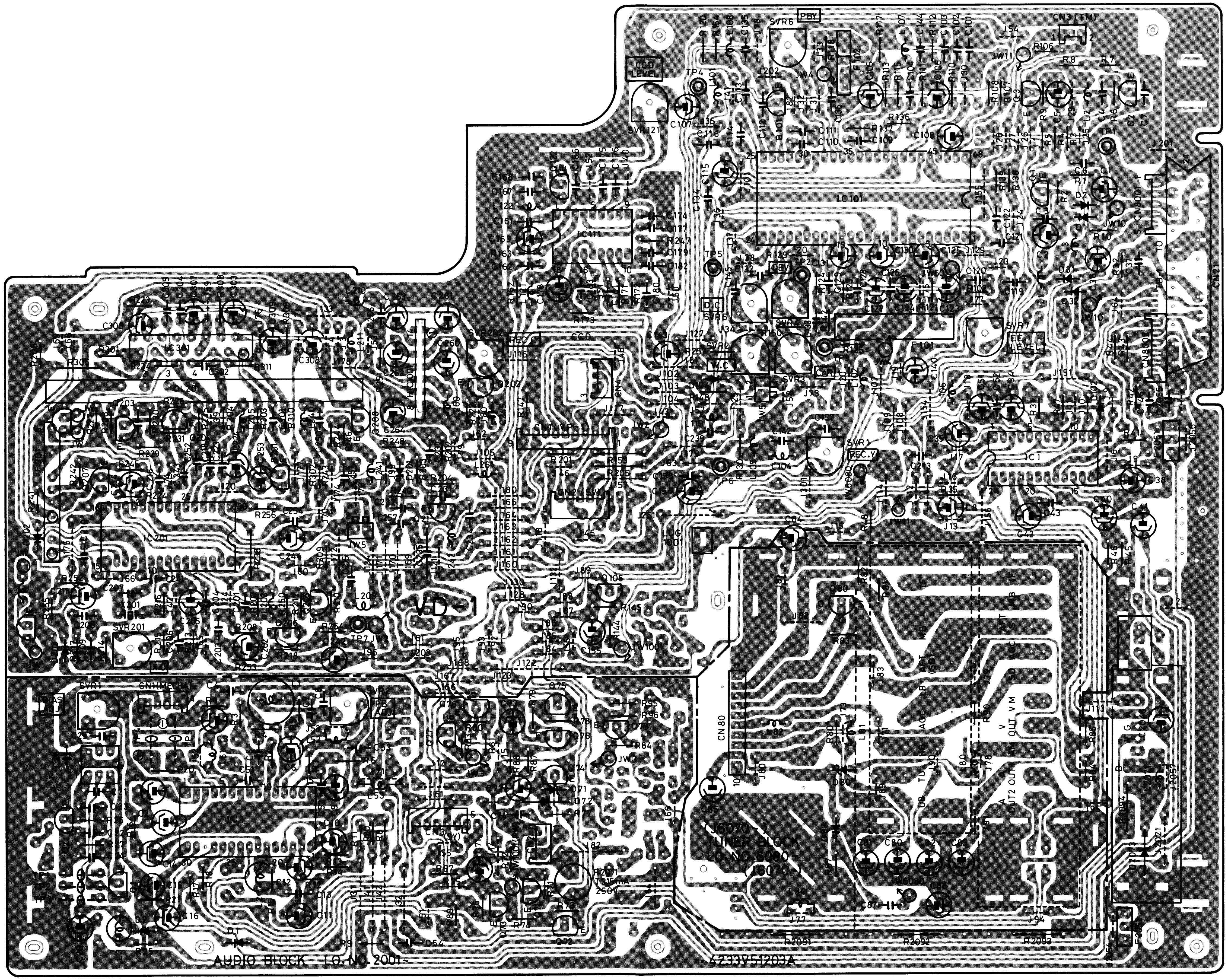

AFT S CURVE
(IF BLOCK Pin 3)
Q6080
AFT SWITCHING
AFT SW
(CN6080 Pin 3)
TUNER BLOCK
AFT 3
LB 4
HB 6
TU 7
(CN6080 Pin 7)
UB 8
(CN6080 Pin 8)
IF 1
ANT IN
AGC 5
MB 2
12V
TN-1 BOARD IF BLOCK
IC01
VIF/SIF
F01
SAW FILTER
Q01
IF AMP
VR01
RF AGC
VIF AMP
RF AGC
T02
DET. TRANS
T01
AFC TRANS
VIDEO DET.
AFT
B/W NC
IF AGC NC
MUTE
LIM. AMP
FM DET.
MUTE
C09
Q03
BUFFER
Q04
VIDEO AMP
F04
5.5MHz TRAP
Q02
BUFFER
F03
5.5MHz FILTER
C15
F02
6,0 MHz DET.
Q05
AUDIO MUTE
+B
3 AFT S CURVE
7 VIDEO OUT
5 SD SIGNAL
2 12V
6 NC
10 NC
9 AUDIO OUT
8 AUDIO MUTE

VD-1 Audio-Schaltung
VD-1 Audio Schematic Diagram

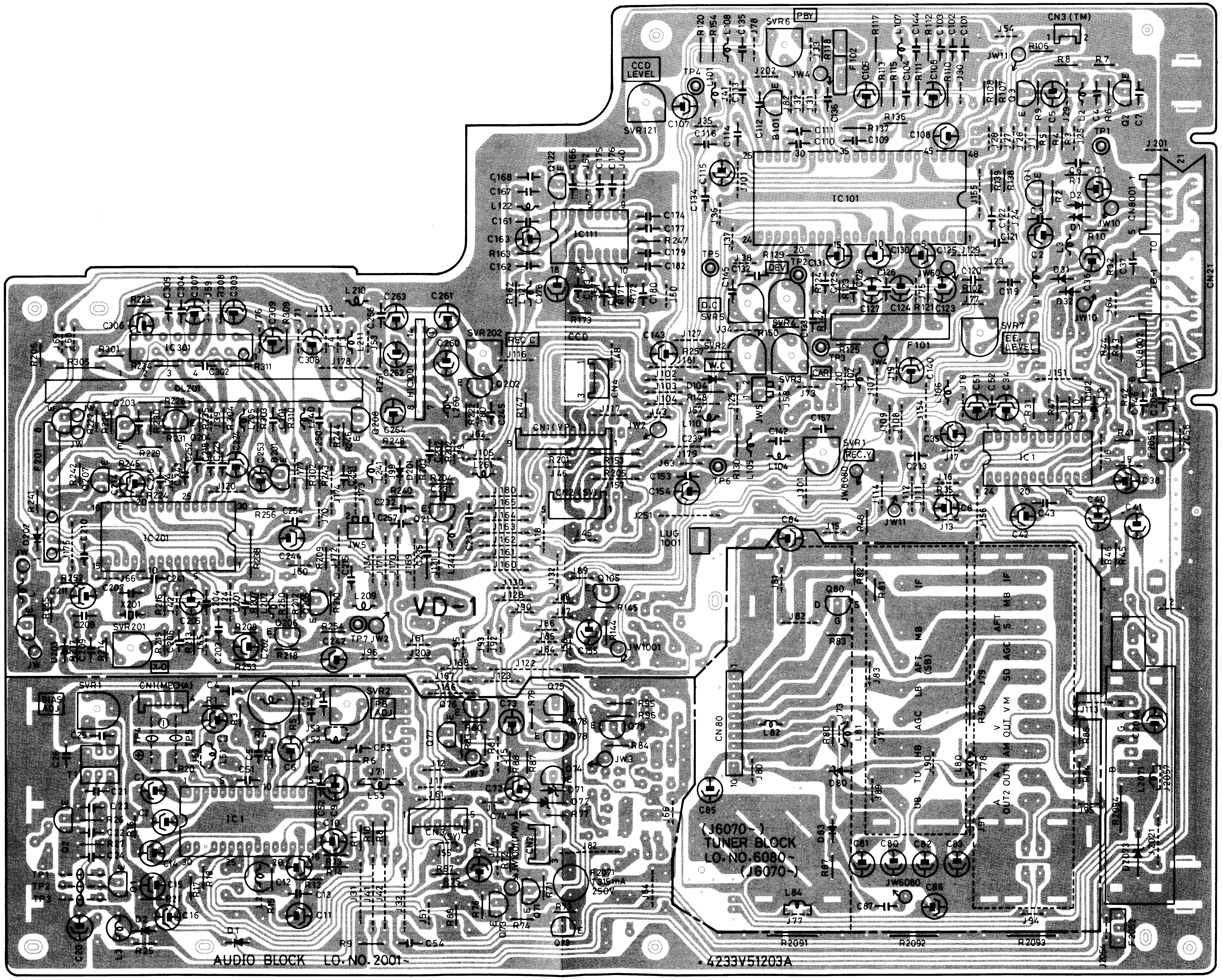
German-Version


REC H
SWD 12V
PB 5V
AD MUTE
IC2001 LA7096 R/P AMP
D2001 1SS133 or GMA01
R2021 39K
C2015 4.7/25
R2018 10K
R2017 10K
C2016 10/16
C2013 0.018
R2015 2.7K
L2002 10mH
C2012 1/50
R2014 820
R2013 4.7K
R2012 2.2M
C2011 47/10
C2010 10/16
R2010 1.2K
R2011 820
R2008 750
R2009 1.2K
C2014 1/50
R2016 18K
REC/EE CONT
PB EE
PB/EE CONT
MUTE CONT
EP SW CONT
LP SW CONT
REC AMP
REC MUTE
ALC DET
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
C2001 47/16
C2002 47/16
C2051 1000P
L2051
C2003 1/50
R2001 6.8K
C2004 820P
R2002 100
R2003 220K
R2004 6.2K
C2005 0.018
R2005 2.7K
C2006 0.47/50
L2052
C2007 3900P
C2008 3300P
L2001 27mH
SVR2002 10K (P.B LEVEL ADJ)
C2052 1500P
R2007 3.3K
C2009 47/10
R2006 22K
C2053 100P
L2053 560μ
C2054 100P
CN2001(MECHA) WHITE
R-PHEAD
L-PHEAD
A.E F.E
GND
A.E
F.E
TP2004
TP2005
R2020 100
SVR2001 100K(BIAS.ADJ)
D2002 1SS133 or GMA01
C2025 220P
R2025 3.9
L2003 560μ
T2001
Q2001 2SC536F,G OSC
C2023 3300P
C2021 0.027
TP2002
TP2003
C2022 4700P
R2026 33K
R2027 33K
TP2001
Q2002 2SC536F,G OSC
C2024 3300P
C2020 100/16
C2026 0.027
F2052
F2051
C2055 150P
RF OUT
LINE IN
LINE OUT
PB 5V
REC EE5V
REC L
PB EE 5V
SWD 5V
ALWAYS 5V
PB H
D.O.P
ALWAYS 12V
TO VIDEO BLOCK
Q2076 2SA984E,F SWITCH
R2081 4.7K
R2080 2.7K
R2097 1K
Q2077 2SA984E,F SWITCH
R2084 4.7K
R2083 2.7K
R2095 47K
R2096 47K
Q2079 2SC536E,F SWITCH
Q2075 2SA984F SWITCH
R2078 4.7K
R2079 4.7K
D2073 GZA5.1Y
L2071 1μH
Q2074 2SD400E,F REG
Q2078 2SC536E,F SWITCH
R2087 68K
C2073 47/6.3
R2088 4.7K
R2077 360
D2071 1SS133 or GMA01
C2072 1/50
D2072 GZS5.1Y
Q2072 2SA984F SWITCH
Q2071 2SB985T SWITCH
R2073 220
R2074 1.8K
R2071 6.8K
Q2073 2SC536G,F SWITCH
R2075 10K
R2072 560
C2071 22/10
R2076 10K
F2071 T315mA 250V
R2094 15
R2093 15
R2092 15
R2091 15
CN 2002(PW)WHITE
GND
ALWAYS 12V
ALWAYS 5.8V
TO PW-1 CN5002
CN 2003(SY)YELLOW
D.O.P
PBH
RECH
A MUTE
POWER UP
TO SY-1 CN3005
R2089 22K
VOLTAGE : REC(PLAY) MODE

VD-1 Video/Audio & Tuner-Platte
VD-1 Video/Audio & Tuner Circuit Board


CN3 (TM)
PBY
SVR6
CCD LEVEL
SVR121
TP4
IC101
IC111
CCD
D.C SVR5
REC.C
SVR202
W.C
DEV
CAR
SVR7
EE LEVEL
SVR1
REC.Y
IC1
CN21
CN800
J 201
IC301
IC201
SVR201
VD-1
CN1(MECHA)
CN8(SY)
IC1
CN 80
16070~ TUNER BLOCK LO. NO. 6080~ (16070~)
AUDIO BLOCK LO. NO. 2001~
4233V51203A
AFT
AGC
VIDEO OUT
AUDIO OUT
R2091
R2092
R2093

VD-1 Video/Audio & Tuner-Platte
VD-1 Video/Audio & Tuner Circuit Board

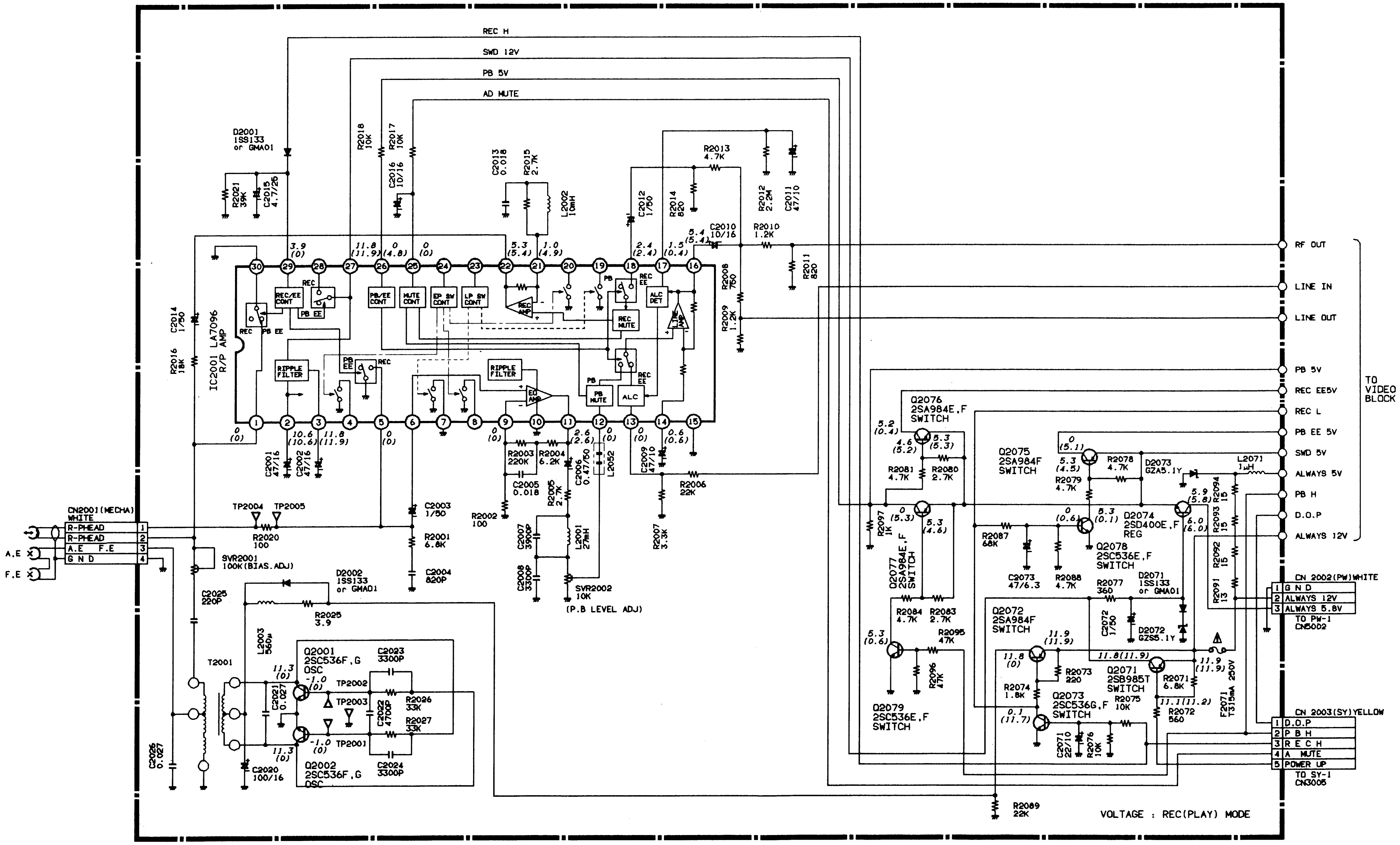


VD-1
IC101
IC111
IC301
IC201
IC1
DL201
CN1(VP)
CN3(TM)
CN21
CN80
CN1(MECHA)
CCD LEVEL
PBY
REC C
REC.Y
EE LEVEL
W.C
DEV
CAR
D.C
BIAS ADJ
PB ADJ
X-D
LUG 1001
(J6070~)
TUNER BLOCK
LO. NO. 6080~
(J6070~)
AUDIO BLOCK LO. NO. 2001~
4233V51203A
F2071 T315mA 250V

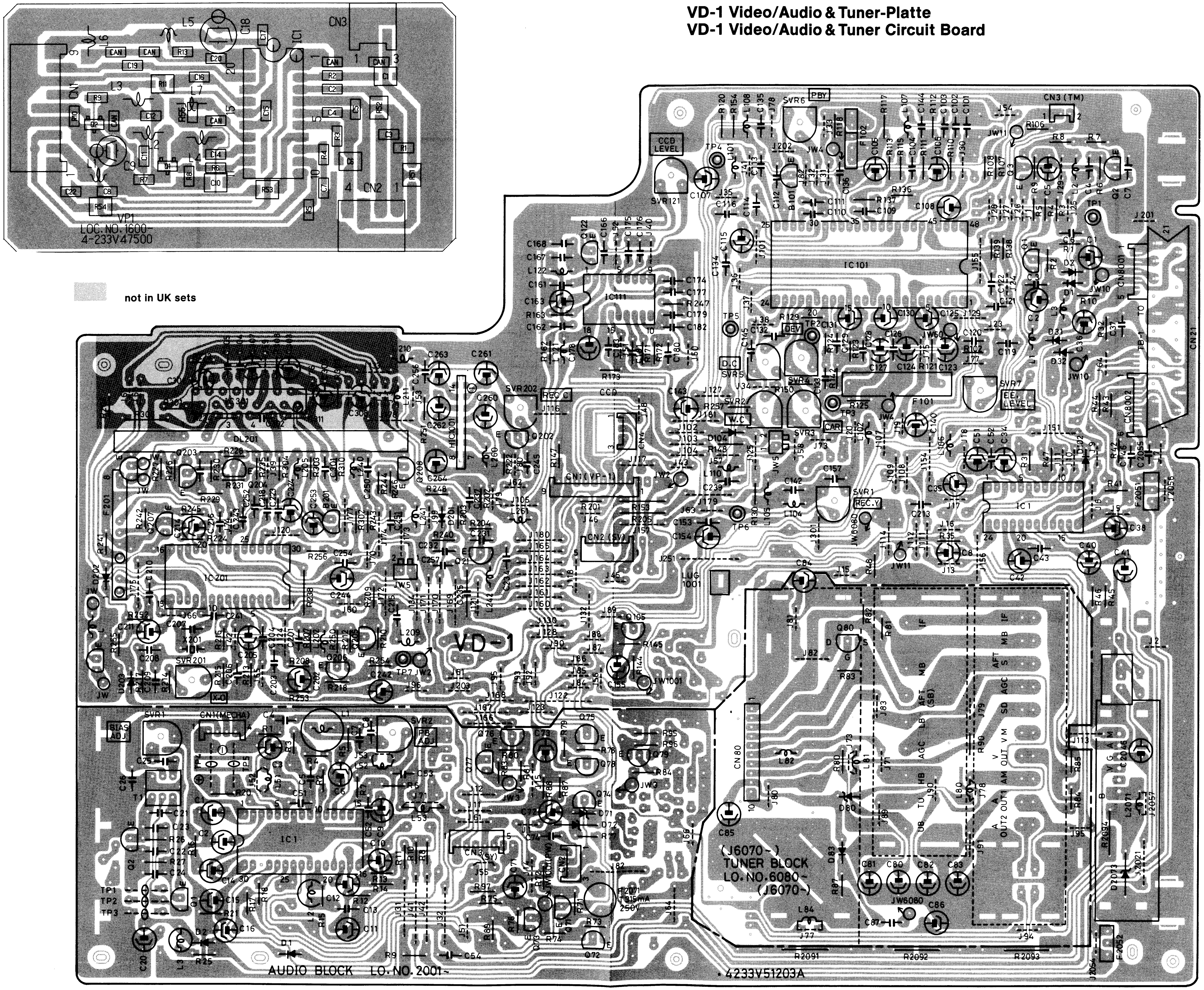
VD-1 Audio-Schaltung
VD-1 Audio Schematic Diagram

***UK Version**

***UK stands for United Kingdom**


REC H
SWD 12V
PB 5V
AD MUTE
D2001 1SS133 or GMA01
R2021 39K
C2015 4.7/25
R2018 10K
R2017 10K
C2016 10/16
C2013 0.018
R2015 2.7K
L2002 10mH
C2012 1/50
R2014 820
R2013 4.7K
R2012 2.2M
C2011 47/10
C2010 10/16
R2010 1.2K
R2011 820
R2008 750
R2009 1.2K
IC2001 LA7096 R/P AMP
C2014 1/50
R2016 18K
REC/EE CONT
PB/EE CONT
MUTE CONT
EP SW CONT
LP SW CONT
REC AMP
ALC DET
REC MUTE
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
C2001 47/16
C2002 47/16
R2003 220K
R2004 6.2K
C2005 0.018
R2005 2.7K
C2006 0.47/50
L2052
C2009 47/10
R2006 22K
R2007 3.3K
C2003 1/50
R2002 100
R2001 6.8K
C2004 820P
C2007 3900P
C2008 3300P
L2001 27mH
SVR2002 10K (P.B LEVEL ADJ)
TP2004
TP2005
R2020 100
CN2001(MECHA) WHITE
R-PHEAD
R-PHEAD
A.E F.E
G N D
A.E
F.E
SVR2001 100K(BIAS.ADJ)
D2002 1SS133 or GMA01
C2025 220P
R2025 3.9
L2003 560u
T2001
Q2001 2SC536F,G OSC
C2023 3300P
C2021 0.027
TP2002
TP2003
C2022 4700P
R2026 33K
R2027 33K
TP2001
C2020 100/16
Q2002 2SC536F,G OSC
C2024 3300P
C2026 0.027
Q2076 2SA984E,F SWITCH
R2081 4.7K
R2080 2.7K
R2097 1K
Q2077 2SA984E,F SWITCH
R2084 4.7K
R2083 2.7K
R2095 47K
R2096 47K
Q2079 2SC536E,F SWITCH
Q2075 2SA984F SWITCH
R2078 4.7K
R2079 4.7K
D2073 GZA5.1Y
L2071 1μH
Q2074 2SD400E,F REG
Q2078 2SC536E,F SWITCH
R2087 68K
C2073 47/6.3
R2088 4.7K
R2077 360
D2071 1SS133 or GMA01
R2094 15
R2093 15
R2092 15
R2091 13
C2072 1/50
D2072 GZS5.1Y
Q2072 2SA984F SWITCH
R2073 220
Q2071 2SB985T SWITCH
R2071 6.8K
R2074 1.8K
Q2073 2SC536G,F SWITCH
R2075 10K
R2072 560
F2071 T315mA 250V
C2071 22/10
R2076 10K
R2089 22K
RF OUT
LINE IN
LINE OUT
PB 5V
REC EE5V
REC L
PB EE 5V
SWD 5V
ALWAYS 5V
PB H
D.O.P
ALWAYS 12V
TO VIDEO BLOCK
CN 2002(PW)WHITE
G N D
ALWAYS 12V
ALWAYS 5.8V
TO PW-1 CN5002
CN 2003(SY)YELLOW
D.O.P
P B H
R E C H
A MUTE
POWER UP
TO SY-1 CN3005
VOLTAGE : REC(PLAY) MODE

VP-1 Video Vorverstärkerplatte
VP-1 Video Pre-Amp Circuit Board

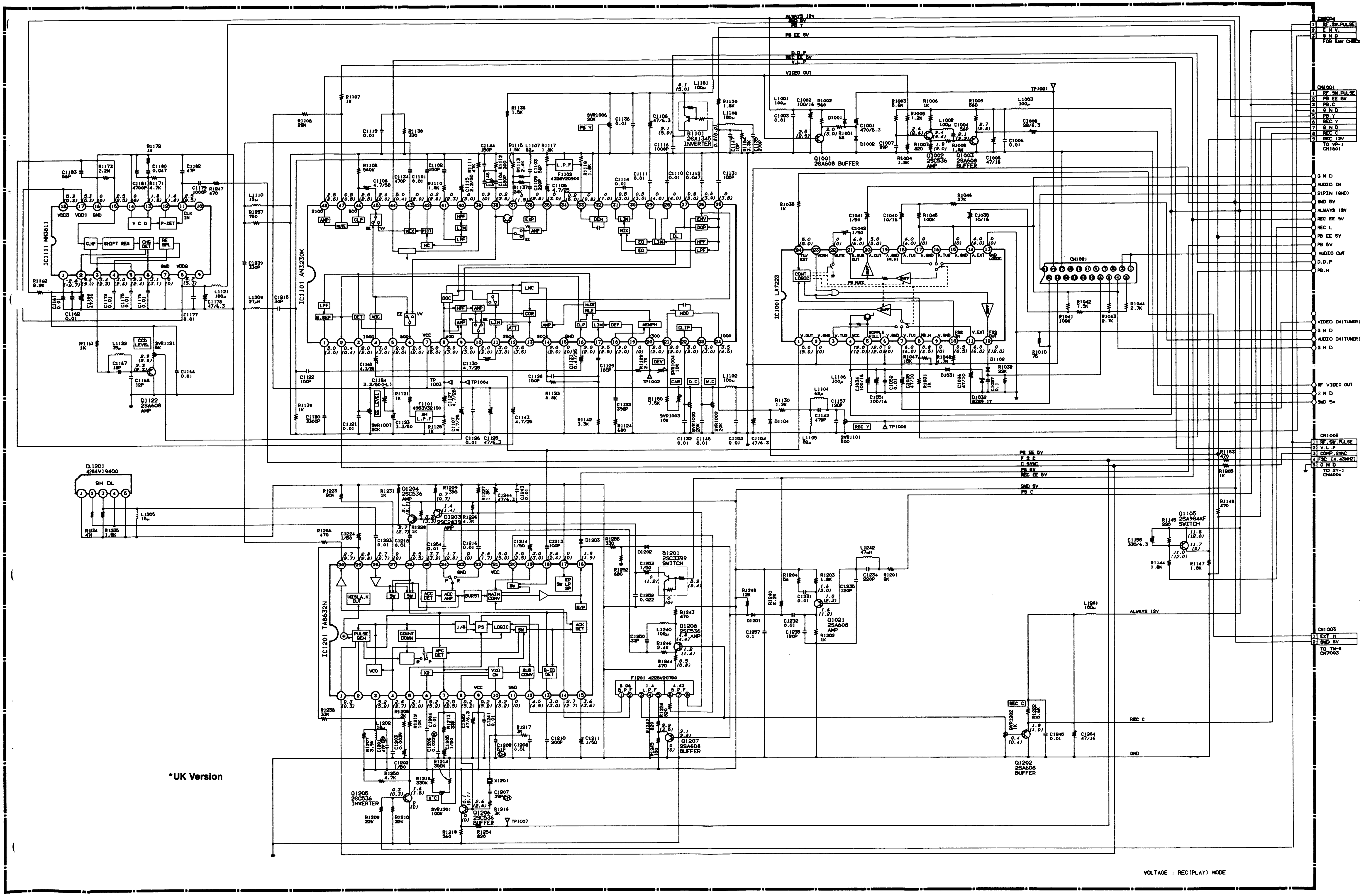

VP1
LOC.NO.1600-
4-233V47500
CN1
CN2
CN3
IC1

▨ not in UK sets

VD-1 Video/Audio & Tuner-Platte
VD-1 Video/Audio & Tuner Circuit Board

VD-1
AUDIO BLOCK LO.NO.2001-
(J6070-)
TUNER BLOCK
LO.NO.6080-
(J6070-)
4233V51203A
IC101
IC111
IC201
IC1
CN21
CN80
CN3 (TM)
CN1(VP-1)
CN1(MECHA)
CCD LEVEL
EE LEVEL
BIAS ADJ
PB ADJ

VD-1 Video-Schaltung
VD-1 Video Schematic Diagram

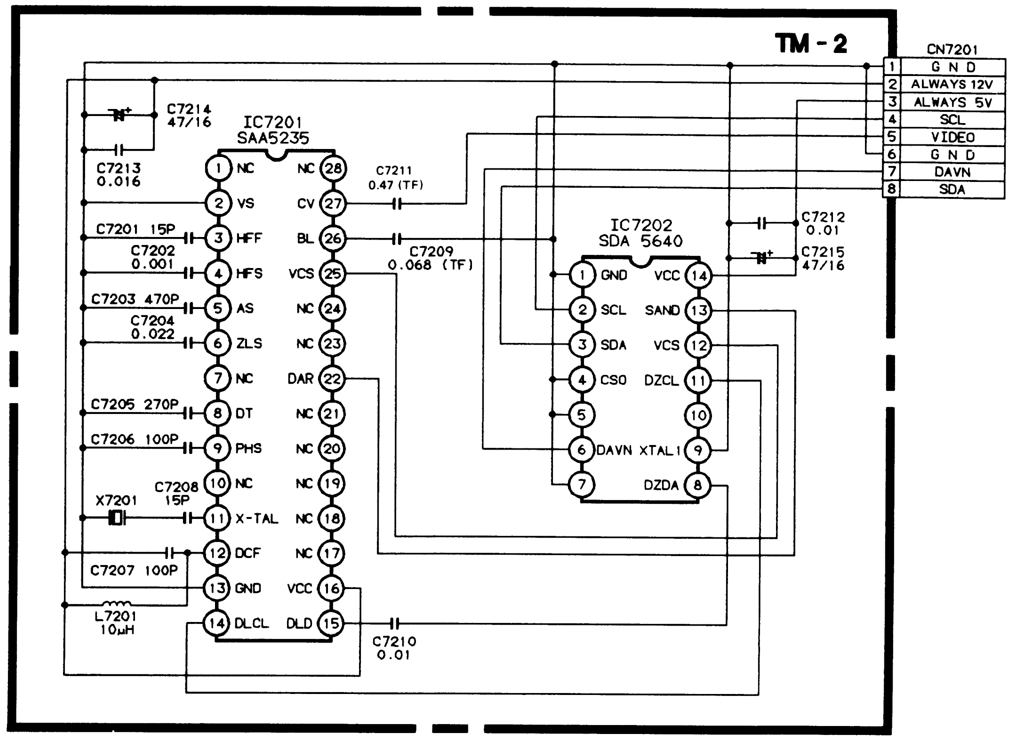

IC1111 MN3611
IC1101 AN3230K
IC1001 LA7223
IC1201 TA8632N
DL1201 4284VJ9400
2H DL
Q1122 2SA608 AMP
B1101 2SA1345 INVERTER
Q1001 2SA608 BUFFER
Q1002 2SC536 AMP
Q1003 2SA608 BUFFER
Q1204 2SC536 AMP
Q1203 2SC2839 AMP
B1201 2SC3399 SWITCH
Q1208 2SC536 AMP
Q1021 2SA608 AMP
Q1207 2SA608 BUFFER
Q1205 2SC536 INVERTER
Q1206 2SC536 BUFFER
Q1202 2SA608 BUFFER
Q1105 2SA984KF SWITCH
F1201 4228V20700
CN1004
RF.SW.PULSE
ENV.
GND
FOR ENV CHECK
CN1001
RF.SW.PULSE
PB EE 5V
PB.C
GND
PB.Y
REC Y
GND
REC C
REC 12V
TO VP-1 CN1501
CN1021
GND
AUDIO IN
21PIN (GND)
SW5 5V
ALWAYS 12V
REC EE 5V
REC L
PB EE 5V
PB 5V
AUDIO OUT
D.D.P
PB.H
VIDEO IN(TUNER)
GND
AUDIO IN(TUNER)
GND
RF VIDEO OUT
GND
SW5 5V
CN1002
RF.SW.PULSE
V.L.P
COMP.SYNC
FSC (4.43MHZ)
GND
TO SY-1 CN4006
CN1003
EXT H
SW5 5V
TO TM-6 CN7003
ALWAYS 12V
PB EE 5V
D.D.P
REC EE 5V
V.L.P
VIDEO OUT
TP1001
TP1002
TP1003
TP1004
TP1006
TP1007
ALWAYS 12V
REC C
GND

*UK Version

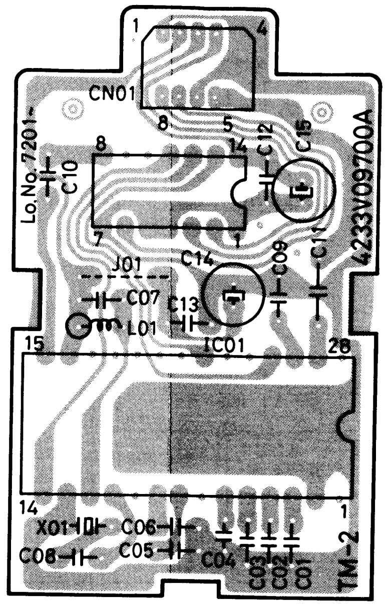
VOLTAGE : REC(PLAY) MODE

TM-2 VPS-Schaltung
TM-2 VPS Schematic Diagram

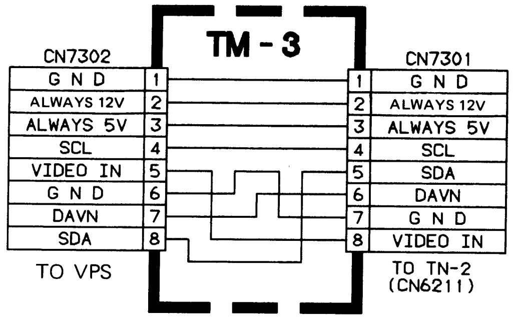
Ausführung 1
1st version

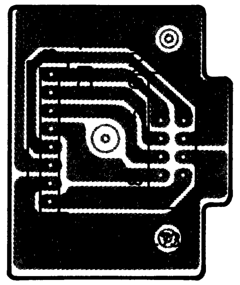

TM - 2
CN7201
1 GND
2 ALWAYS 12V
3 ALWAYS 5V
4 SCL
5 VIDEO
6 GND
7 DAVN
8 SDA
IC7201
SAA5235
1 NC
2 VS
3 HFF
4 HFS
5 AS
6 ZLS
7 NC
8 DT
9 PHS
10 NC
11 X-TAL
12 DCF
13 GND
14 DLCL
28 NC
27 CV
26 BL
25 VCS
24 NC
23 NC
22 DAR
21 NC
20 NC
19 NC
18 NC
17 NC
16 VCC
15 DLD
IC7202
SDA 5640
1 GND
2 SCL
3 SDA
4 CSO
5
6 DAVN
7
14 VCC
13 SAND
12 VCS
11 DZCL
10
9 XTAL1
8 DZDA
C7214 47/16
C7213 0.016
C7201 15P
C7202 0.001
C7203 470P
C7204 0.022
C7205 270P
C7206 100P
C7208 15P
X7201
C7207 100P
L7201 10μH
C7211 0.47 (TF)
C7209 0.068 (TF)
C7212 0.01
C7215 47/16
C7210 0.01

TM-2 VPS-Platte
TM-2 VPS Circuit Board


1
4
CN01
8
5
14
Lo.No.7201-
C10
C12
C15
4233V09700A
7
1
J01
C14
C09
C11
C07
C13
L01
IC01
15
28
14
1
X01
C06
C08
C05
C04
C03
C02
C01
TM-2

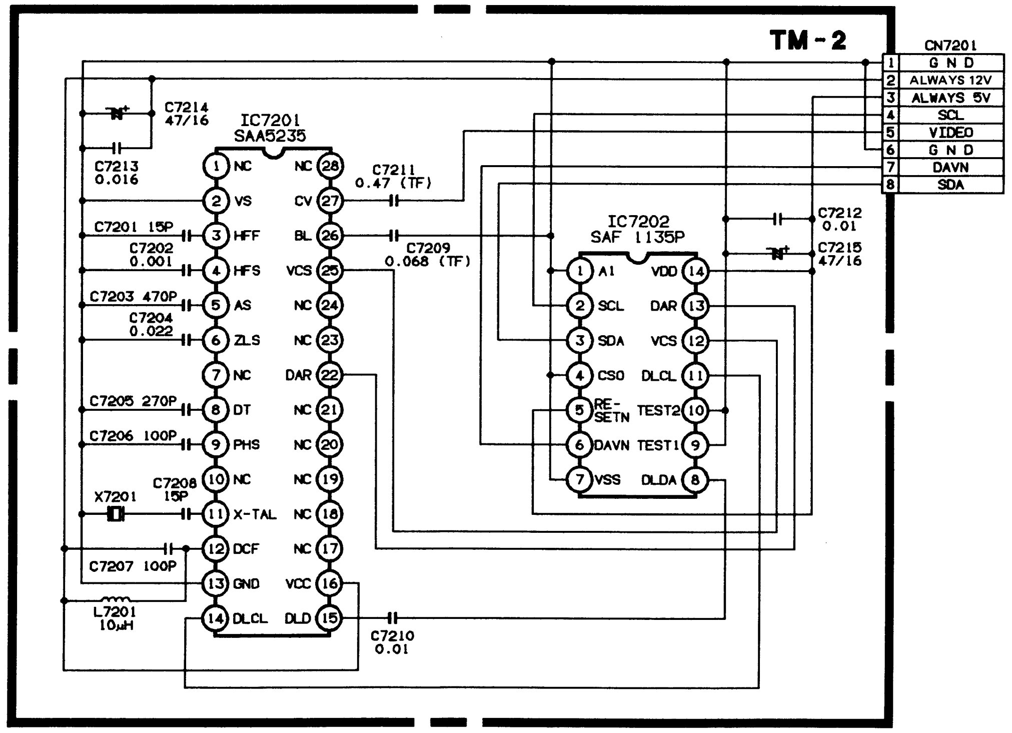
TM-3 VPS-Anschlußplatte
TM-3 VPS Connection


TM - 3
CN7302
1 GND
2 ALWAYS 12V
3 ALWAYS 5V
4 SCL
5 VIDEO IN
6 GND
7 DAVN
8 SDA
TO VPS
CN7301
1 GND
2 ALWAYS 12V
3 ALWAYS 5V
4 SCL
5 SDA
6 DAVN
7 GND
8 VIDEO IN
TO TN-2
(CN6211)

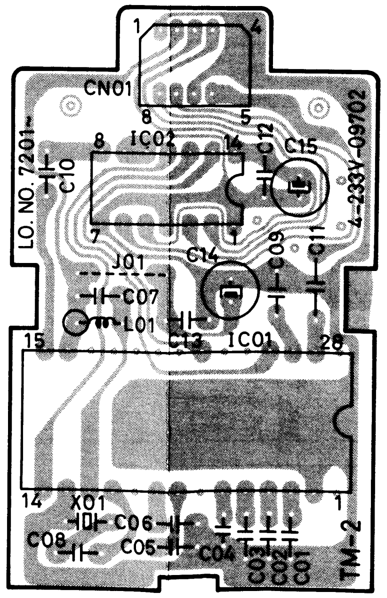


TM-2 VPS-Schaltung
TM-2 VPS Schematic Diagram

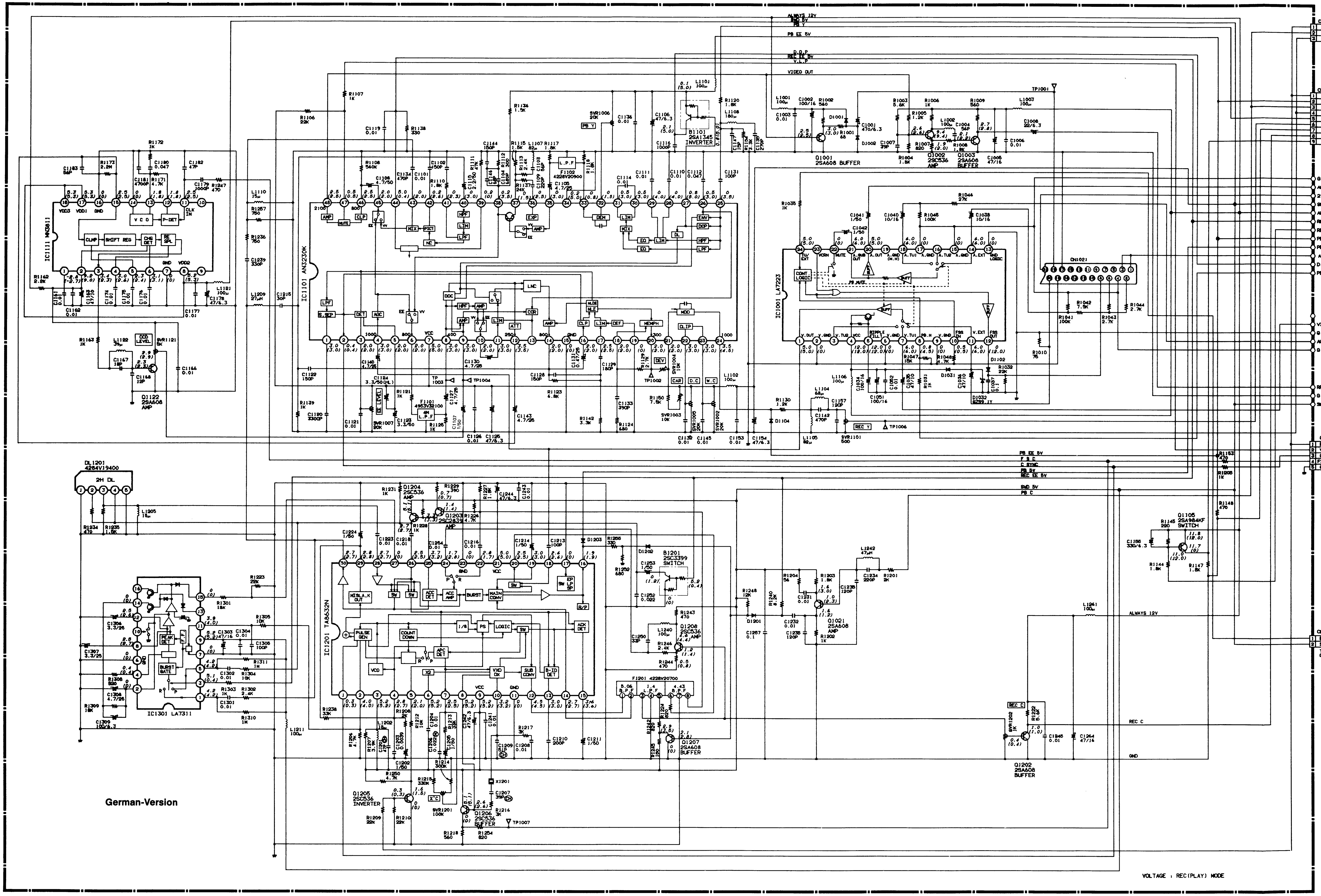
Ausführung 2
2nd version


TM - 2
CN7201
1 GND
2 ALWAYS 12V
3 ALWAYS 5V
4 SCL
5 VIDEO
6 GND
7 DAVN
8 SDA
IC7201
SAA5235
1 NC
2 VS
3 HFF
4 HFS
5 AS
6 ZLS
7 NC
8 DT
9 PHS
10 NC
11 X-TAL
12 DCF
13 GND
14 DLCL
28 NC
27 CV
26 BL
25 VCS
24 NC
23 NC
22 DAR
21 NC
20 NC
19 NC
18 NC
17 NC
16 VCC
15 DLD
IC7202
SAF 1135P
1 A1
2 SCL
3 SDA
4 CSO
5 RE-SETN
6 DAVN
7 VSS
14 VDD
13 DAR
12 VCS
11 DLCL
10 TEST2
9 TEST1
8 DLDA
C7214 47/16
C7213 0.016
C7201 15P
C7202 0.001
C7203 470P
C7204 0.022
C7205 270P
C7206 100P
C7208 15P
X7201
C7207 100P
L7201 10μH
C7211 0.47 (TF)
C7209 0.068 (TF)
C7212 0.01
C7215 47/16
C7210 0.01

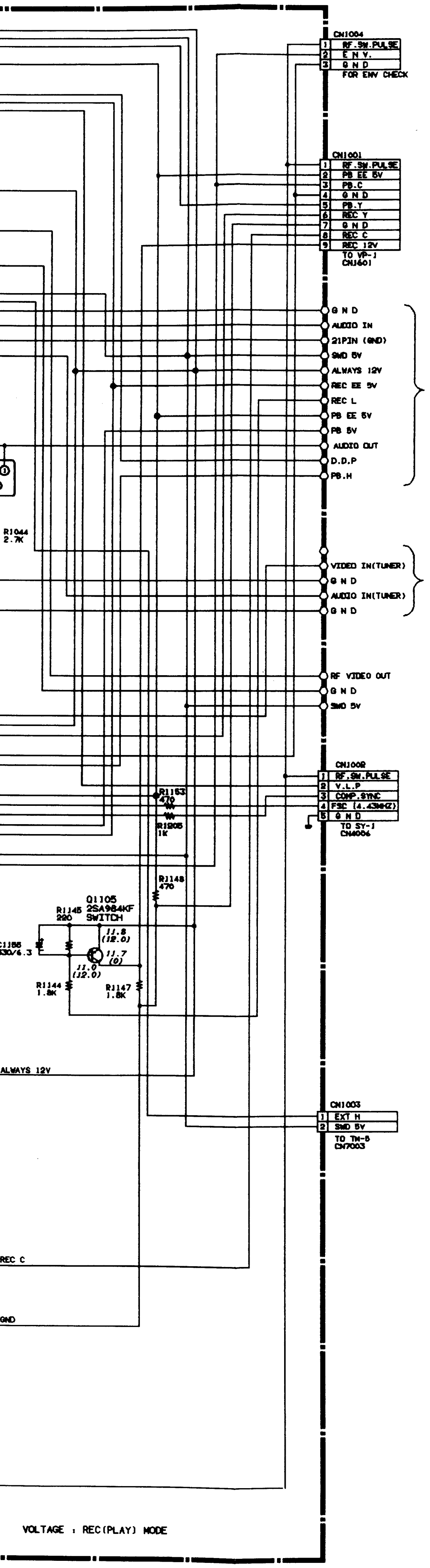
TM-2 VPS-Platte
TM-2 VPS Circuit Board


1
4
CN01
8
5
8
IC02
14
C12
C15
LO.NO.7201-
C10
4-233Y-09702
7
1
J01
C14
C09
C11
C07
L01
C13
IC01
15
28
14
X01
1
C06
C08
C05
C04
C03
C02
C01
TM-2

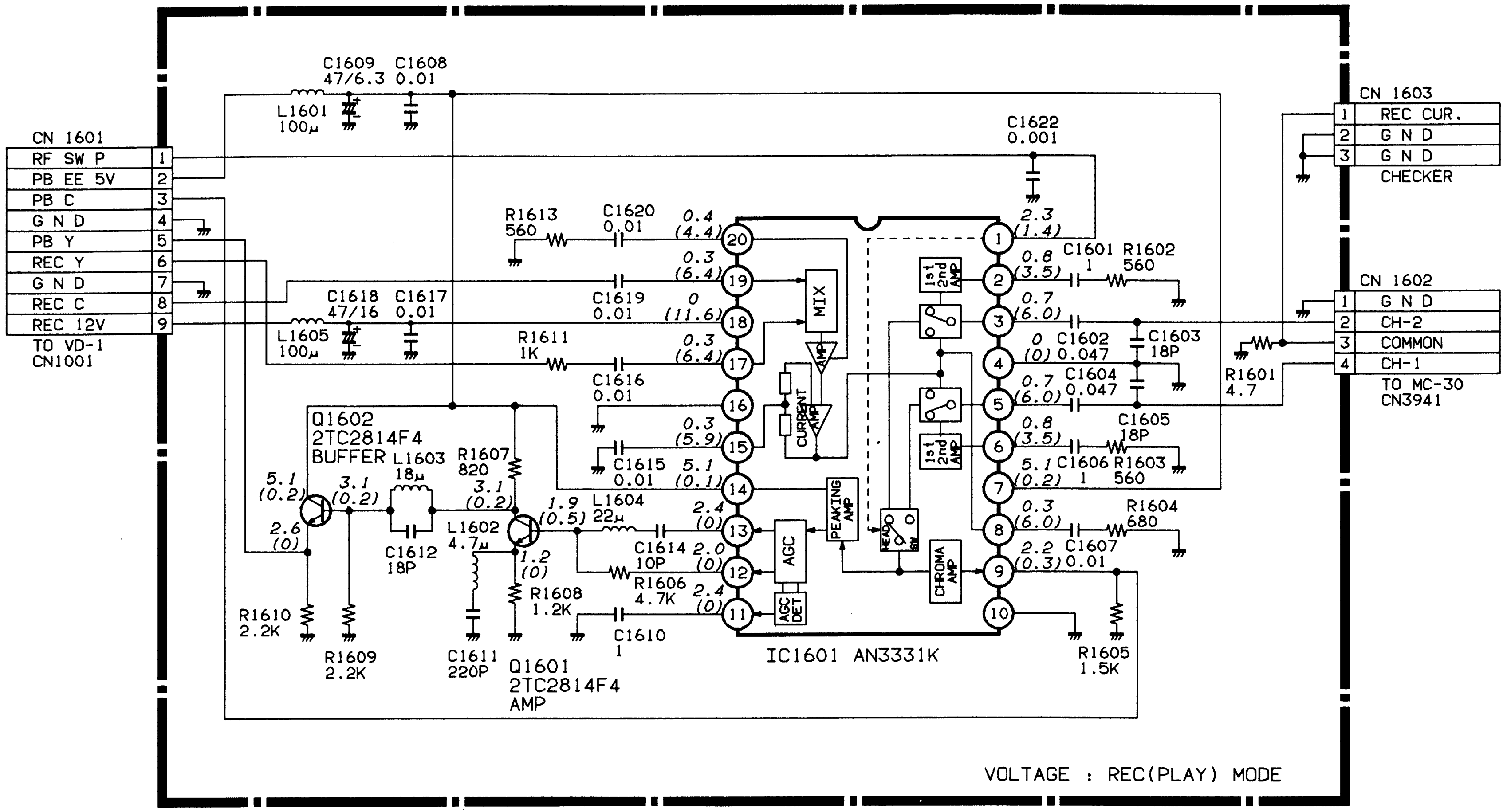
VD-1 Video-Schaltung
VD-1 Video Schematic Diagram



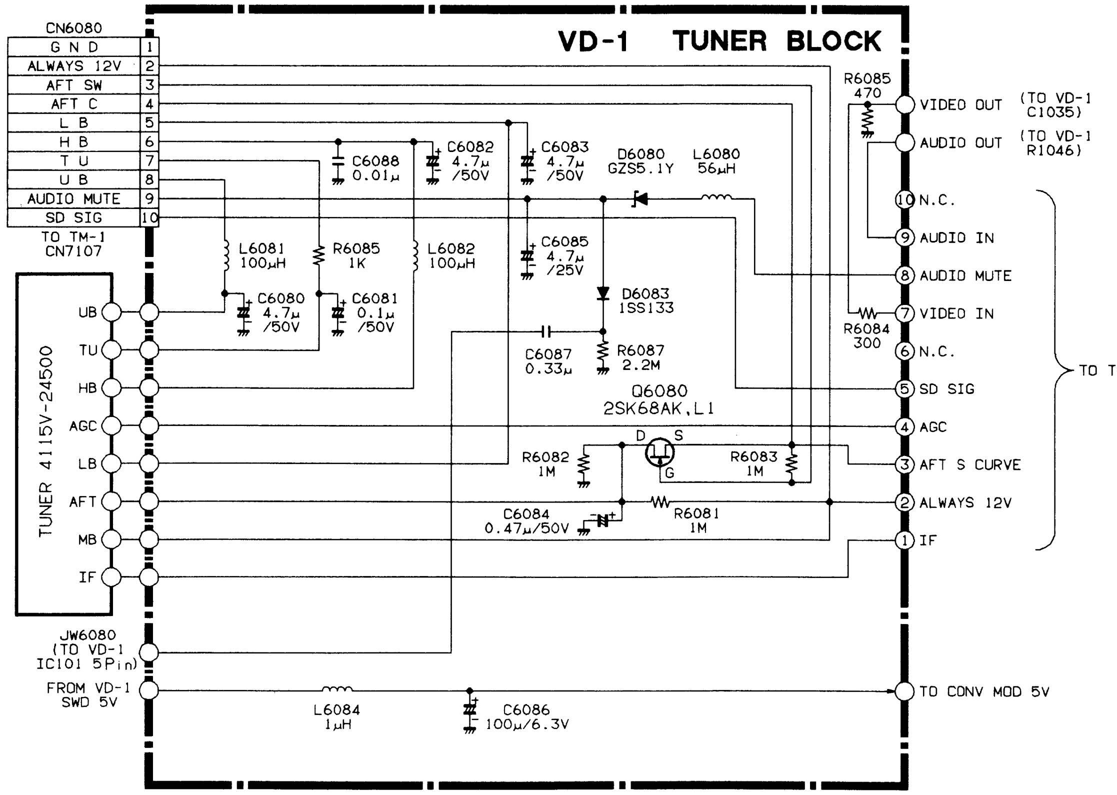
IC1111 MN3811
IC1101 AN3230K
IC1001 LA7223
IC1201 TA8632N
IC1301 LA7311
DL1201 4284V19400
2H DL
Q1101 2SA1345 INVERTER
Q1001 2SA608 BUFFER
Q1002 2SC536 AMP
Q1003 2SA608 BUFFER
Q1122 2SA608 AMP
Q1204 2SC536 AMP
Q1203 2SC2839 AMP
Q1201 2SC3399 SWITCH
Q1208 2SC536 AMP
Q1021 2SA608 AMP
Q1207 2SA608 BUFFER
Q1205 2SC536 INVERTER
Q1206 2SC536 BUFFER
Q1202 2SA608 BUFFER
Q1105 2SA984KF SWITCH
CN1004
RF.SW.PULSE
ENV.
GND
FOR ENV CHECK
CN1001
RF.SW.PULSE
PB EE 5V
PB.C
GND
PB.Y
REC Y
GND
REC C
REC 12V
TO VP-1 CN1601
GND
AUDIO IN
21PIN (GND)
SWD 5V
ALWAYS 12V
REC EE 5V
REC L
PB EE 5V
PB 5V
AUDIO OUT
D.D.P
PB.H
VIDEO IN(TUNER)
GND
AUDIO IN(TUNER)
GND
RF VIDEO OUT
GND
SWD 5V
CN1002
RF.SW.PULSE
V.L.P
COMP.SYNC
FSC (4.43MHZ)
GND
TO SY-1 CN6004
CN1003
EXT H
SWD 5V
TO TM-5 CN7003
CN1021
ALWAYS 12V
SWD 5V
PB Y
PB EE 5V
D.D.P
REC EE 5V
V.L.P
VIDEO OUT
TP1001
ALWAYS 12V
REC C
GND
German-Version
VOLTAGE : REC(PLAY) MODE


CN1004
RF.SW.PULSE
ENV.
GND
FOR ENV CHECK
CN1001
RF.SW.PULSE
PB EE 5V
PB.C
GND
PB.Y
REC Y
GND
REC C
REC 12V
TO VP-1 CN1601
GND
AUDIO IN
21PIN (GND)
SWD 5V
ALWAYS 12V
REC EE 5V
REC L
PB EE 5V
PB 5V
AUDIO OUT
D.D.P
PB.H
TO AUDIO
VIDEO IN(TUNER)
GND
AUDIO IN(TUNER)
GND
TO TUNER
RF VIDEO OUT
GND
SWD 5V
CN1002
RF.SW.PULSE
V.L.P
COMP.SYNC
FSC (4.43MHZ)
GND
TO SY-1 CN4006
R1044 2.7K
R1153 470
R1205 1K
R1148 470
Q1105 2SA984KF SWITCH
R1145 220
R1144 1.8K
R1147 1.8K
ALWAYS 12V
CN1003
EXT H
SWD 5V
TO TN-6 CN7053
REC C
GND
VOLTAGE : REC(PLAY) MODE

VP-1 Video-Vorverstärker-Schaltung
VP-1 Video Pre-Amp Schematic Diagram

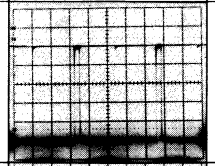
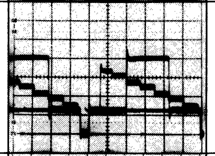
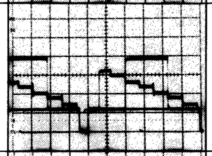
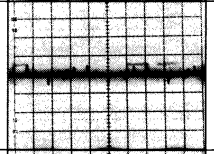
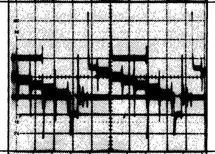
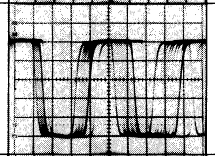
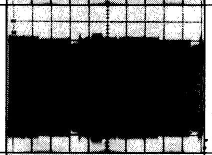
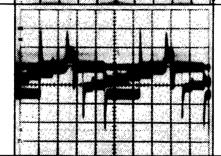
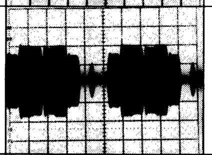
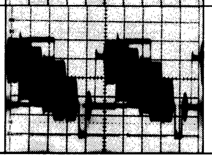

CN 1601
RF SW P
PB EE 5V
PB C
GND
PB Y
REC Y
GND
REC C
REC 12V
TO VD-1 CN1001
C1609 47/6.3
C1608 0.01
L1601 100μ
C1622 0.001
R1613 560
C1620 0.01
C1618 47/16
C1617 0.01
C1619 0.01
L1605 100μ
R1611 1K
C1616 0.01
Q1602 2TC2814F4 BUFFER
L1603 18μ
R1607 820
C1615 0.01
L1604 22μ
C1614 10P
R1606 4.7K
C1612 18P
L1602 4.7μ
R1608 1.2K
C1610 1
R1610 2.2K
R1609 2.2K
C1611 220P
Q1601 2TC2814F4 AMP
IC1601 AN3331K
MIX
AMP
CURRENT AMP
PEAKING AMP
AGC
AGC DET
HEAD SW
CHROMA AMP
1st 2nd AMP
C1601 1
R1602 560
C1602 0.047
C1603 18P
C1604 0.047
C1605 18P
C1606 1
R1603 560
R1604 680
C1607 0.01
R1605 1.5K
R1601 4.7
CN 1603
REC CUR.
GND
GND
CHECKER
CN 1602
GND
CH-2
COMMON
CH-1
TO MC-30 CN3941
VOLTAGE : REC(PLAY) MODE

VD-1 Tuner-Schaltung
VD-1 Tuner Schematic Diagram


VD-1 TUNER BLOCK
CN6080
GND
ALWAYS 12V
AFT SW
AFT C
L B
H B
T U
U B
AUDIO MUTE
SD SIG
TO TM-1 CN7107
TUNER 4115V-24500
UB
TU
HB
AGC
LB
AFT
MB
IF
C6088 0.01μ
C6082 4.7μ /50V
C6083 4.7μ /50V
D6080 GZS5.1Y
L6080 56μH
C6085 4.7μ /25V
L6081 100μH
R6085 1K
L6082 100μH
C6080 4.7μ /50V
C6081 0.1μ /50V
D6083 1SS133
C6087 0.33μ
R6087 2.2M
Q6080 2SK68AK,L1
R6082 1M
R6083 1M
C6084 0.47μ/50V
R6081 1M
R6085 470
R6084 300
VIDEO OUT (TO VD-1 C1035)
AUDIO OUT (TO VD-1 R1046)
N.C.
AUDIO IN
AUDIO MUTE
VIDEO IN
N.C.
SD SIG
AGC
AFT S CURVE
ALWAYS 12V
IF
TO TN-1
JW6080 (TO VD-1 IC101 5Pin)
FROM VD-1 SWD 5V
L6084 1μH
C6086 100μ/6.3V
TO CONV MOD 5V

German-Version

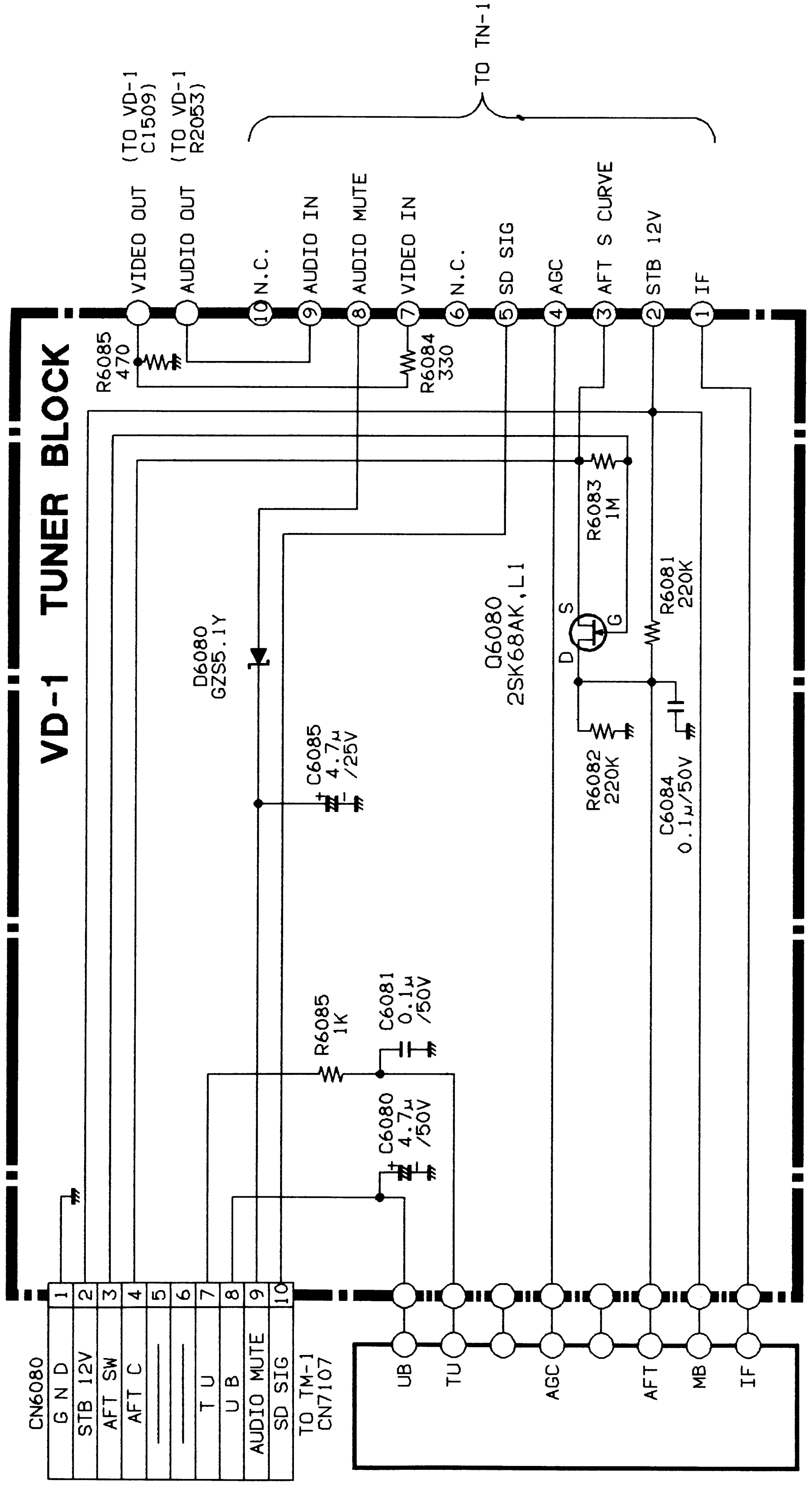
Video Oszillogramme
Video Waveforms

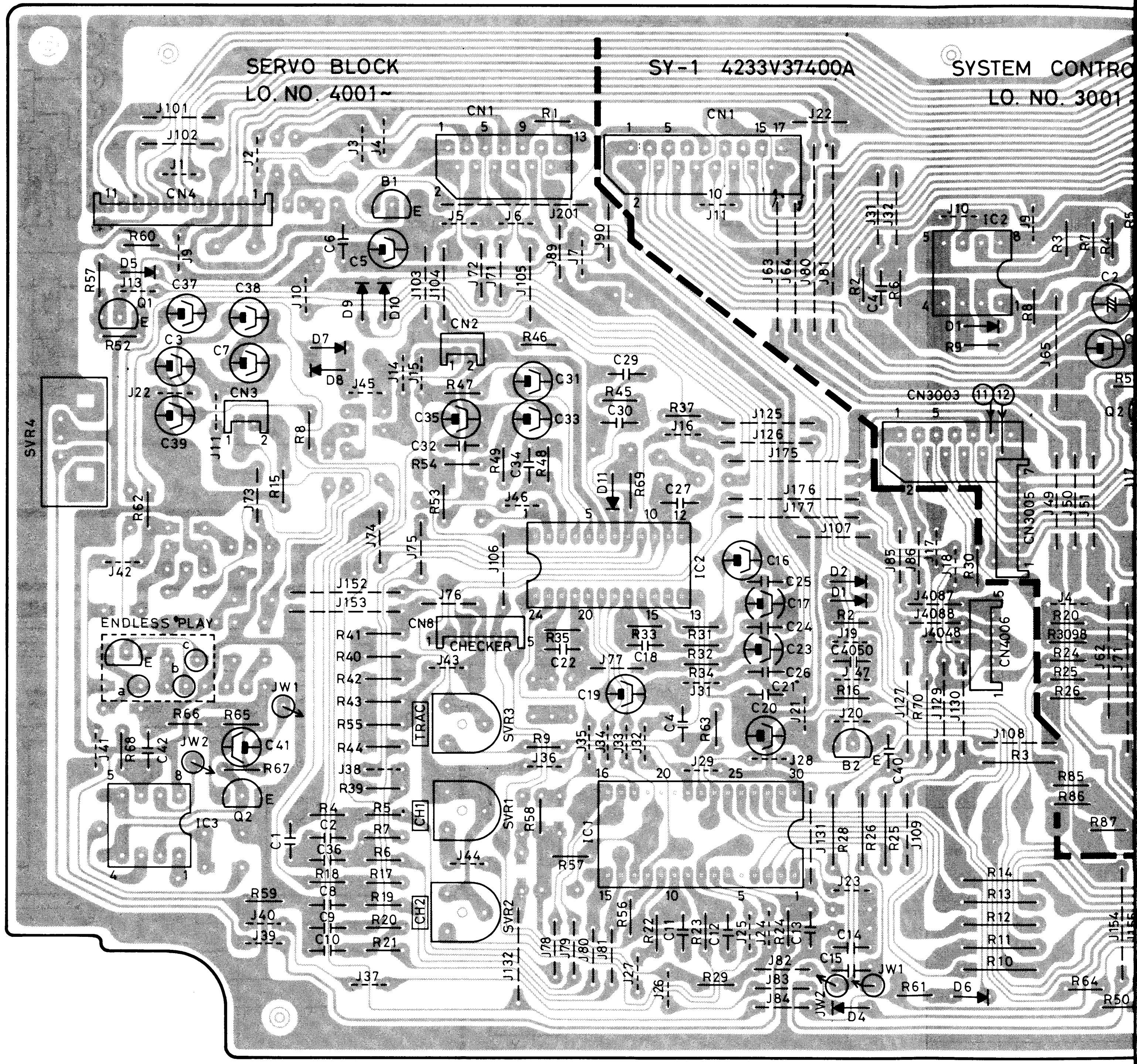
Pin No.		
IC1001 (2)		5 Vp-p 15.625 KHz
(8)		PLAY 500 m Vp-p
(8)		REC 500 m Vp-p
(10)(11)		PLAY 50 m Vp-p
(21)		REC 700 m Vp-p
(24)		REC 1 Vp-p
(25)		PLAY 400 m Vp-p
(35)		PLAY 300 m Vp-p
(43)		PLAY 400 m Vp-p
TP1001		PLAY 1 Vp-p

VD-1 Tuner-Schaltung
VD-1 Tuner Schematic Diagram

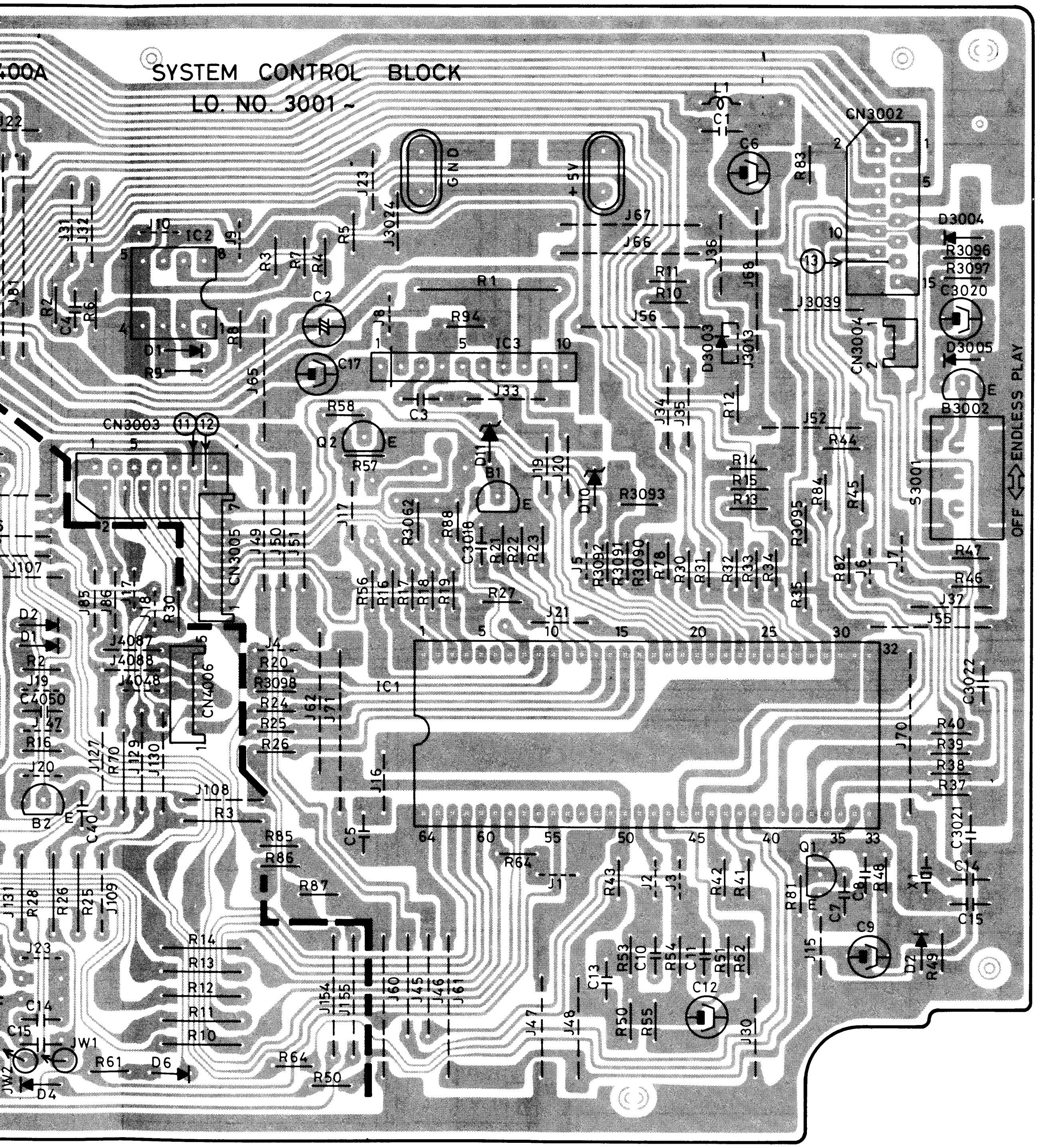
*UK Version

*UK stands for United Kingdom

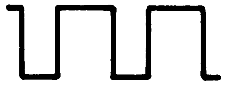
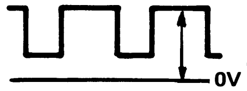
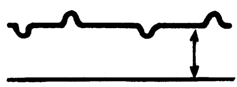
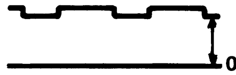
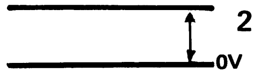
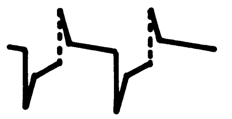
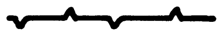
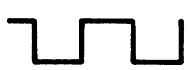
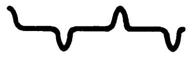
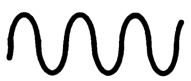
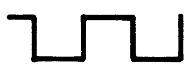
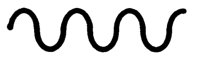
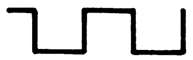
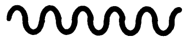
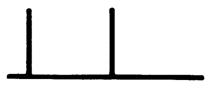
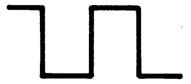
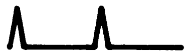
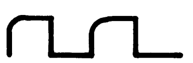
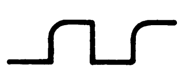
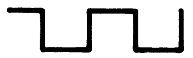
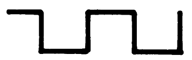
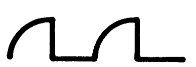
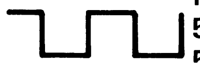

VD-1 TUNER BLOCK
TO TN-1
(TO VD-1 C1509)
(TO VD-1 R2053)
VIDEO OUT
AUDIO OUT
10 N.C.
9 AUDIO IN
8 AUDIO MUTE
7 VIDEO IN
6 N.C.
5 SD SIG
4 AGC
3 AFT S CURVE
2 STB 12V
1 IF
R6085 470
R6084 330
R6083 1M
R6081 220K
Q6080 2SK68AK,L1
D6080 GZS5.1Y
C6085 4.7µ /25V
R6082 220K
C6084 0.1µ/50V
R6085 1K
C6081 0.1µ /50V
C6080 4.7µ /50V
CN6080
G N D
STB 12V
AFT SW
AFT C
T U
U B
AUDIO MUTE
SD SIG
TO TM-1 CN7107
UB
TU
AGC
AFT
MB
IF


SERVO BLOCK
LO. NO. 4001~
SY-1 4233V37400A
SYSTEM CONTRO
LO. NO. 3001
SVR4
ENDLESS PLAY
CHECKER
TRAC
CH1
CH2
SVR1
SVR2
SVR3
IC1
IC2
IC3
CN1
CN2
CN3
CN4
CN8
CN3003
CN3005
CN4006

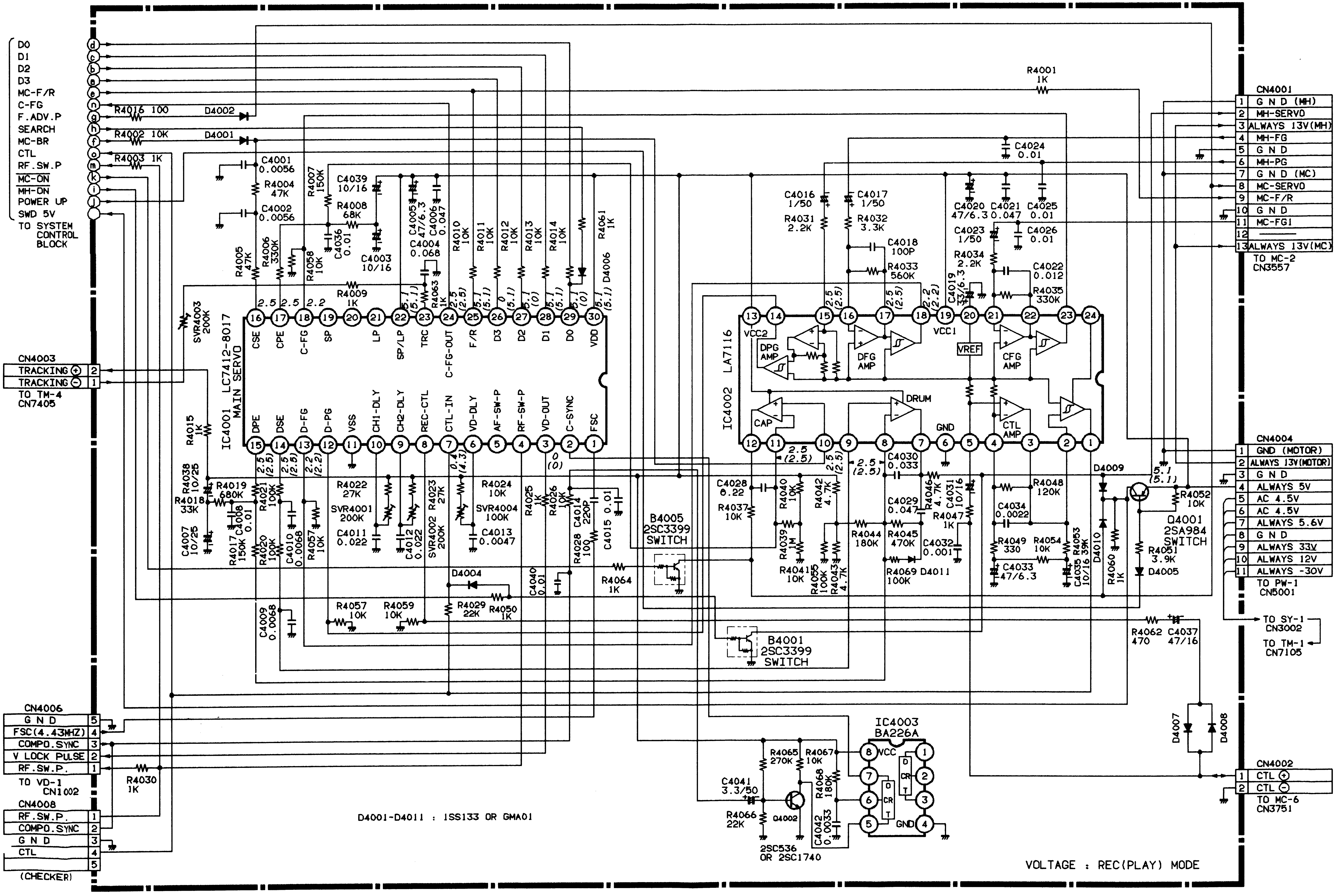
SY-1 Servo/Ablaufsteuerungs-Platte
SY-1 Servo/System Control Circuit Board


SYSTEM CONTROL BLOCK
LO. NO. 3001 ~
IC1
IC2
IC3
CN3002
CN3003
CN3004
CN3005
CN4006
S3001
OFF ⇔ ENDLESS PLAY
GND
+5V
Q1
Q2
B1
B2
B3002
D3004
D3005
C3020
C3021
C3022
R3093
R3095
R3096
R3097

Servo Oszillogramme
Servo Waveforms

Pin No.	
IC4002	
①	 PLAY 25Hz 3Vp-p
② ③	 REC 25Hz 4.4V 0V  PLAY 2.5V 0V
④	 REC 2.5V 0V  PLAY 2.5V 0V
⑤	 REC 25Hz 3Vp-p  PLAY GND
⑭	 REC, PLAY 25Hz 4.4Vp-p
⑮	 REC, PLAY 25Hz 100mVo-p
⑰	 REC, PLAY 625Hz 2.4Vp-p
⑱	 REC, PLAY 625Hz 4.4Vp-p
㉒	 REC, PLAY 1.0 Vp-p
㉓	 REC, PLAY 504Hz 4.4Vp-p
IC4001	
① ⑦ ⑧	 REC, PLAY 0.5Vp-p
②	 REC 5.0Hz 5.0Vp-p
④	 REC, PLAY 25Hz 5.0Vp-p
⑥	 PLAY 25Hz 3.0Vp-p
⑨	 PLAY 25Hz 5.0Vp-p
⑩	 PLAY 25Hz 5.0Vp-p
⑭ ⑯	 REC, PLAY 8.592KHz 5.0Vp-p
⑮ ⑰	 REC, PLAY 2.149KHz 5.0Vp-p
㉓	 PLAY 25Hz 3.0Vp-p
㉔	 REC, PLAY 504Hz 5.0Vp-p

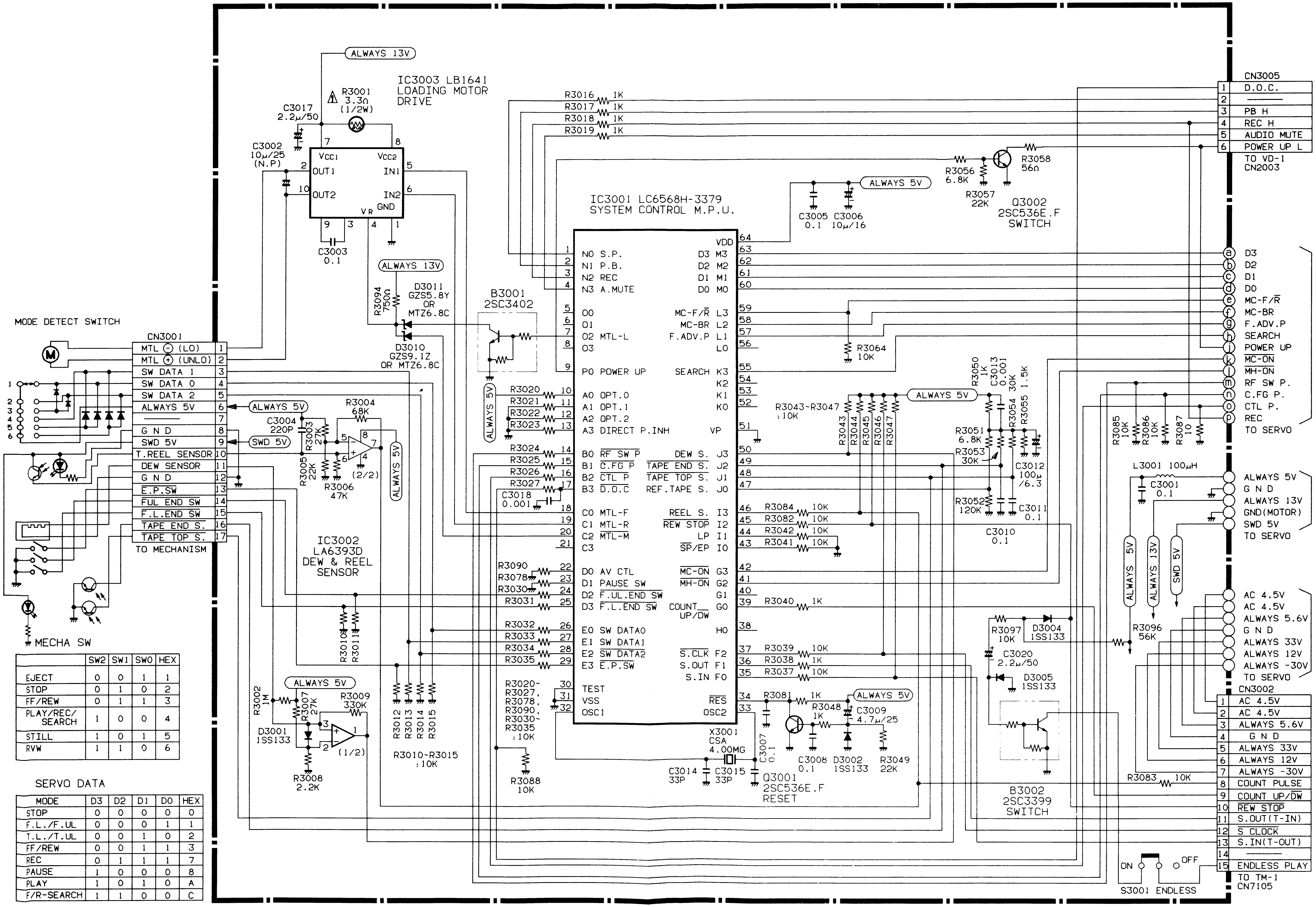
SY-1 Servo-Schaltung
SY-1 Servo Schematic Diagram


D0
D1
D2
D3
MC-F/R
C-FG
F.ADV.P
SEARCH
MC-BR
CTL
RF.SW.P
MC-ON
MH-ON
POWER UP
SWD 5V
TO SYSTEM CONTROL BLOCK
R4016 100
D4002
R4002 10K
D4001
R4003 1K
C4001 0.0056
R4004 47K
C4002 0.0056
R4005 47K
R4006 330K
R4058 10K
R4007 150K
C4039 10/16
R4008 68K
C4036 0.01
C4003 10/16
C4005 47/6.3
C4006 0.047
C4004 0.068
R4009 1K
R4063 1K
R4010 10K
R4011 10K
R4012 10K
R4013 10K
R4014 10K
R4061 1K
D4006
SVR4003 200K
IC4001 LC7412-8017 MAIN SERVO
CSE
CPE
C-FG
SP
LP
SP/LP
TRC
C-FG-OUT
F/R
D3
D2
D1
D0
VDD
DPE
DSE
D-FG
D-PG
VSS
CH1-DLY
CH2-DLY
REC-CTL
CTL-IN
VD-DLY
AF-SW-P
RF-SW-P
VD-OUT
C-SYNC
FSC
CN4003
TRACKING ⊕
TRACKING ⊖
TO TM-4 CN7405
R4015 1K
R4038 10/25
R4018 33K
R4019 680K
C4008 0.01
R4021 100K
C4007 10/25
R4017 150K
R4020 100K
C4010 0.0068
R4057 10K
R4022 27K
SVR4001 200K
C4011 0.022
C4012 0.022
SVR4002 200K
R4023 27K
R4024 10K
SVR4004 100K
C4013 0.0047
R4025 1K
R4026 10K
C4014 220P
R4028 100
C4015 0.01
C4040 0.01
D4004
R4029 22K
R4050 1K
R4064 1K
R4057 10K
R4059 10K
C4009 0.0068
B4005 2SC3399 SWITCH
B4001 2SC3399 SWITCH
CN4006
G N D
FSC(4.43MHZ)
COMPO.SYNC
V LOCK PULSE
RF.SW.P.
TO VD-1 CN1002
R4030 1K
CN4008
RF.SW.P.
COMPO.SYNC
G N D
CTL
(CHECKER)
IC4002 LA7116
VCC2
DPG AMP
DFG AMP
VCC1
VREF
CFG AMP
CAP
DRUM
GND
CTL AMP
C4016 1/50
R4031 2.2K
C4017 1/50
R4032 3.3K
C4018 100P
R4033 560K
C4019 33/6.3
C4024 0.01
C4020 47/6.3
C4021 0.047
C4025 0.01
C4023 1/50
C4026 0.01
R4034 2.2K
C4022 0.012
R4035 330K
R4001 1K
C4028 0.22
R4037 10K
R4040 10K
R4042 4.7K
C4030 0.033
R4039 1M
R4041 10K
R4055 100K
R4043 4.7K
R4044 180K
R4045 470K
C4029 0.047
R4046 4.7K
C4031 10/16
R4047 1K
C4032 0.001
R4069 100K
D4011
C4034 0.0022
R4048 120K
R4049 330
R4054 10K
C4033 47/6.3
R4053 39K
C4035 10/16
D4009
D4010
R4060 1K
R4051 3.9K
D4005
R4052 10K
Q4001 2SA984 SWITCH
R4062 470
C4037 47/16
CN4001
G N D (MH)
MH-SERVO
ALWAYS 13V(MH)
MH-FG
G N D
MH-PG
G N D (MC)
MC-SERVO
MC-F/R
G N D
MC-FG1
ALWAYS 13V(MC)
TO MC-2 CN3557
CN4004
GND (MOTOR)
ALWAYS 13V(MOTOR)
G N D
ALWAYS 5V
AC 4.5V
AC 4.5V
ALWAYS 5.6V
G N D
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
TO PW-1 CN5001
TO SY-1 CN3002
TO TM-1 CN7105
D4007
D4008
CN4002
CTL ⊕
CTL ⊖
TO MC-6 CN3751
IC4003 BA226A
VCC
GND
R4065 270K
R4067 10K
R4068 180K
C4041 3.3/50
R4066 22K
Q4002
2SC536 OR 2SC1740
C4042 0.0033

D4001-D4011 : 1SS133 OR GMA01

VOLTAGE : REC(PLAY) MODE

SY-1 Ablaufsteuerungs-Schaltung
SY-1 System Control Schematic Diagram


IC3003 LB1641 LOADING MOTOR DRIVE
ALWAYS 13V
R3001 3.3Ω (1/2W)
C3017 2.2μ/50
C3002 10μ/25 (N.P)
VCC1
VCC2
OUT1
IN1
OUT2
IN2
VR
GND
C3003 0.1
R3094 750Ω
D3011 GZS5.8Y OR MTZ6.8C
D3010 GZS9.1Z OR MTZ6.8C
B3001 2SC3402
IC3001 LC6568H-3379 SYSTEM CONTROL M.P.U.
R3016 1K
R3017 1K
R3018 1K
R3019 1K
N0 S.P.
N1 P.B.
N2 REC
N3 A.MUTE
O0
O1
O2 MTL-L
O3
P0 POWER UP
A0 OPT.0
A1 OPT.1
A2 OPT.2
A3 DIRECT P.INH
B0 RF SW P
B1 C.FG P
B2 CTL P
B3 D.O.C
C0 MTL-F
C1 MTL-R
C2 MTL-M
C3
D0 AV CTL
D1 PAUSE SW
D2 F.UL.END SW
D3 F.L.END SW
E0 SW DATA0
E1 SW DATA1
E2 SW DATA2
E3 E.P.SW
TEST
VSS
OSC1
VDD
D3 M3
D2 M2
D1 M1
D0 M0
MC-F/R L3
MC-BR L2
F.ADV.P L1
L0
SEARCH K3
K2
K1
K0
VP
DEW S. J3
TAPE END S. J2
TAPE TOP S. J1
REF.TAPE S. J0
REEL S. I3
REW STOP I2
LP I1
SP/EP I0
MC-ON G3
MH-ON G2
G1
COUNT UP/DW G0
H0
S.CLK F2
S.OUT F1
S.IN F0
RES
OSC2
C3005 0.1
C3006 10μ/16
ALWAYS 5V
R3056 6.8K
R3057 22K
R3058 56Ω
Q3002 2SC536E.F SWITCH
R3064 10K
R3043~R3047 :10K
R3050 1K
C3013 0.001
R3054 30K
R3055 1.5K
R3051 6.8K
R3053 30K
R3052 120K
C3012 100μ /6.3
C3011 0.1
C3010 0.1
R3084 10K
R3082 10K
R3042 10K
R3041 10K
R3040 1K
R3039 10K
R3038 1K
R3037 10K
R3081 1K
R3048 1K
C3009 4.7μ/25
X3001 CSA 4.00MG
C3014 33P
C3015 33P
C3007 0.1
C3008 0.1
D3002 1SS133
R3049 22K
Q3001 2SC536E.F RESET
R3020 ~ R3027, R3078, R3090, R3030~ R3035 :10K
R3088 10K
C3018 0.001
MODE DETECT SWITCH
CN3001
MTL ⊖ (LO)
MTL ⊕ (UNLO)
SW DATA 1
SW DATA 0
SW DATA 2
ALWAYS 5V
GND
SWD 5V
T.REEL SENSOR
DEW SENSOR
GND
E.P.SW
FUL END SW
F.L.END SW
TAPE END S.
TAPE TOP S.
TO MECHANISM
MECHA SW
C3004 220P
R3003 27K
R3004 68K
R3005 22K
R3006 47K
(2/2)
IC3002 LA6393D DEW & REEL SENSOR
R3010 R3011
R3012 R3013 R3014 R3015
R3010~R3015 :10K
R3002 1M
R3007 27K
R3009 330K
D3001 1SS133
(1/2)
R3008 2.2K
CN3005
D.O.C.
PB H
REC H
AUDIO MUTE
POWER UP L
TO VD-1 CN2003
D3
D2
D1
D0
MC-F/R
MC-BR
F.ADV.P
SEARCH
POWER UP
MC-ON
MH-ON
RF SW P.
C.FG P.
CTL P.
REC
TO SERVO
R3085 10K
R3086 10K
R3087 10
L3001 100μH
C3001 0.1
ALWAYS 5V
GND
ALWAYS 13V
GND(MOTOR)
SWD 5V
TO SERVO
AC 4.5V
AC 4.5V
ALWAYS 5.6V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
TO SERVO
R3096 56K
R3097 10K
D3004 1SS133
C3020 2.2μ/50
D3005 1SS133
B3002 2SC3399 SWITCH
R3083 10K
CN3002
AC 4.5V
AC 4.5V
ALWAYS 5.6V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DW
REW STOP
S.OUT(T-IN)
S CLOCK
S.IN(T-OUT)
ENDLESS PLAY
TO TM-1 CN7105
ON
OFF
S3001 ENDLESS

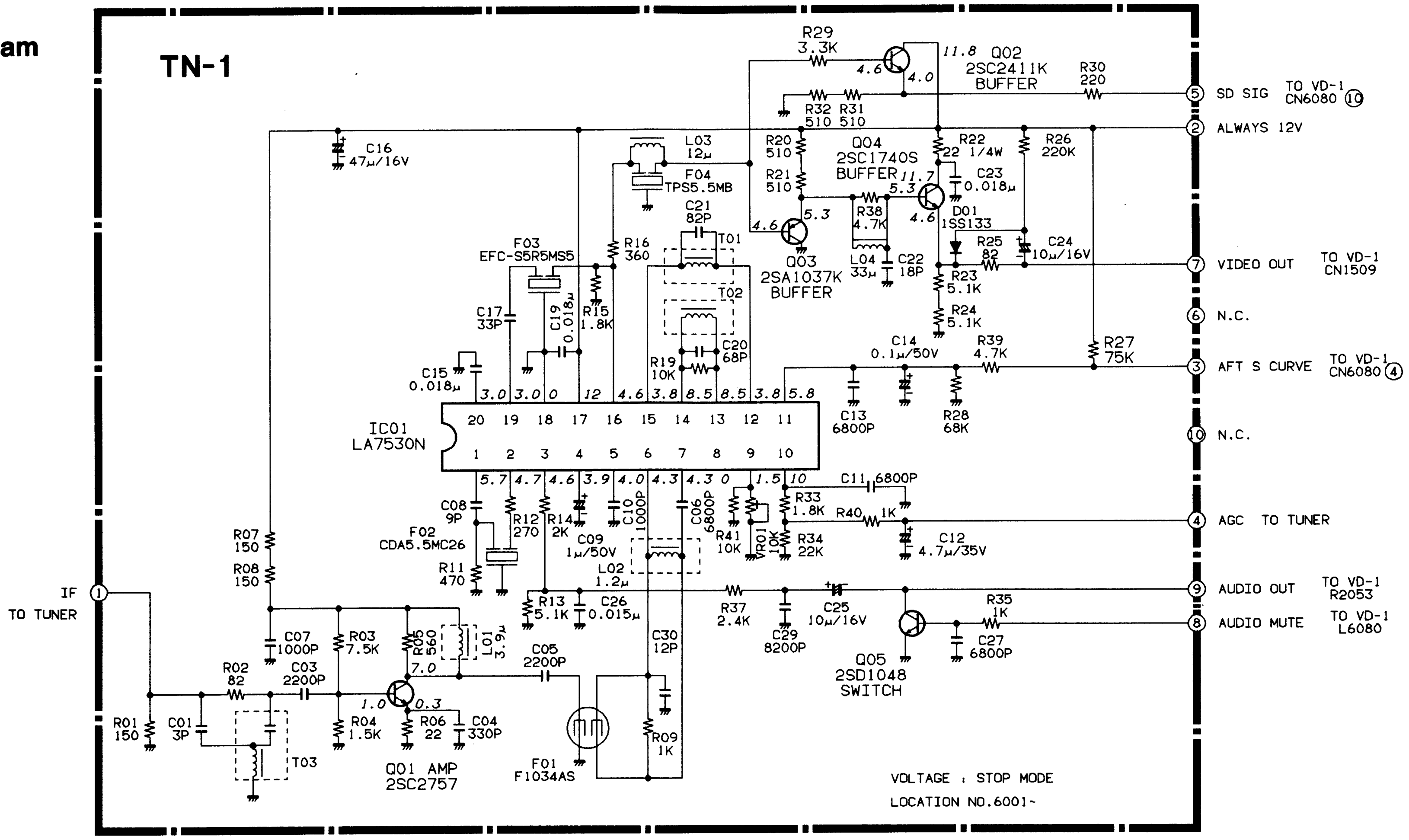
	SW2	SW1	SW0	HEX
EJECT	0	0	1	1
STOP	0	1	0	2
FF/REW	0	1	1	3
PLAY/REC/ SEARCH	1	0	0	4
STILL	1	0	1	5
RVW	1	1	0	6

SERVO DATA

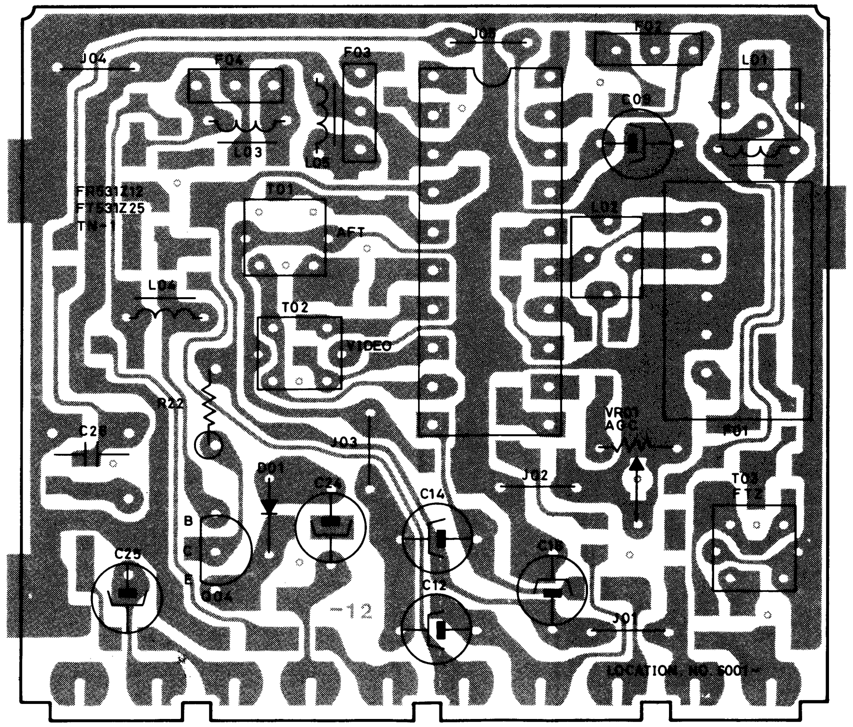
MODE	D3	D2	D1	D0	HEX
STOP	0	0	0	0	0
F.L./F.UL	0	0	0	1	1
T.L./T.UL	0	0	1	0	2
FF/REW	0	0	1	1	3
REC	0	1	1	1	7
PAUSE	1	0	0	0	8
PLAY	1	0	1	0	A
F/R-SEARCH	1	1	0	0	C

TN-1 Tuner/ZF-Schaltung
TN-1 Tuner/IF Schematic Diagram

German-Version

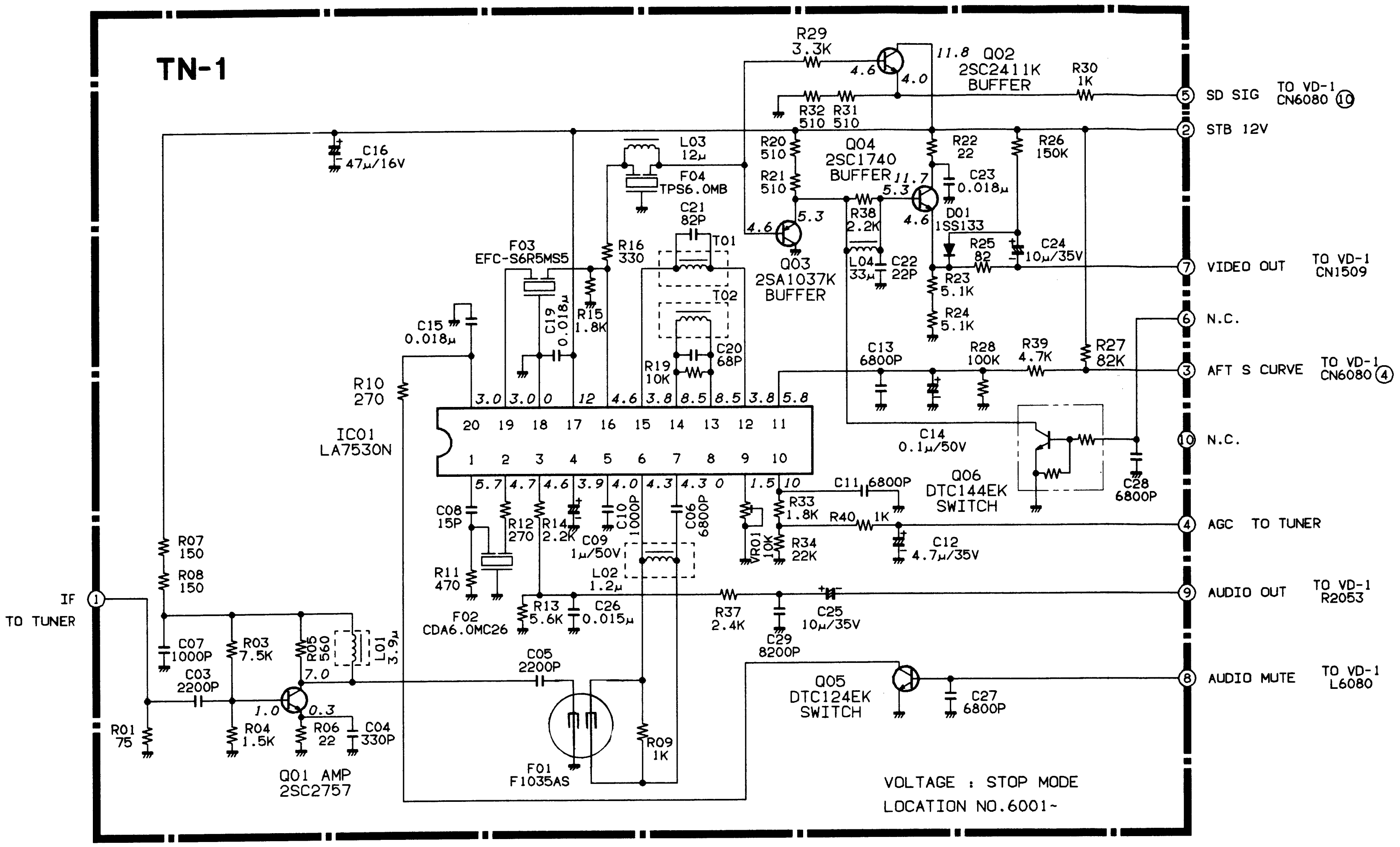

TN-1
R29 3.3K
Q02 2SC2411K BUFFER
R30 220
SD SIG TO VD-1 CN6080 ⑩
R32 R31 510 510
ALWAYS 12V
R20 510
R21 510
Q04 2SC1740S BUFFER
R22 22 1/4W
R26 220K
C23 0.018μ
L03 12μ
F04 TPS5.5MB
C21 82P
T01
T02
C16 47μ/16V
F03 EFC-S5R5MS5
R16 360
R15 1.8K
C17 33P
C19 0.018μ
Q03 2SA1037K BUFFER
R38 4.7K
L04 33μ
C22 18P
D01 1SS133
R25 82
C24 10μ/16V
R23 5.1K
R24 5.1K
VIDEO OUT TO VD-1 CN1509
N.C.
C15 0.018μ
R19 10K
C20 68P
C14 0.1μ/50V
R39 4.7K
R27 75K
AFT S CURVE TO VD-1 CN6080 ④
IC01 LA7530N
C13 6800P
R28 68K
N.C.
C08 9P
R12 270
R14 2K
C10 1000P
C06 6800P
R33 1.8K
C11 6800P
R40 1K
AGC TO TUNER
F02 CDA5.5MC26
R07 150
R08 150
R11 470
C09 1μ/50V
L02 1.2μ
R41 10K
VR01 10K
R34 22K
C12 4.7μ/35V
R13 5.1K
C26 0.015μ
R37 2.4K
C25 10μ/16V
C29 8200P
R35 1K
AUDIO OUT TO VD-1 R2053
AUDIO MUTE TO VD-1 L6080
IF TO TUNER
C07 1000P
R03 7.5K
R05 560
L01 3.9μ
C05 2200P
C30 12P
C27 6800P
Q05 2SD1048 SWITCH
R02 82
C03 2200P
R01 150
C01 3P
T03
R04 1.5K
R06 22
C04 330P
Q01 AMP 2SC2757
F01 F1034AS
R09 1K
VOLTAGE : STOP MODE
LOCATION NO.6001~

TN-1 Tuner/ZF-Platte
TN-1 Tuner/IF Circuit Board

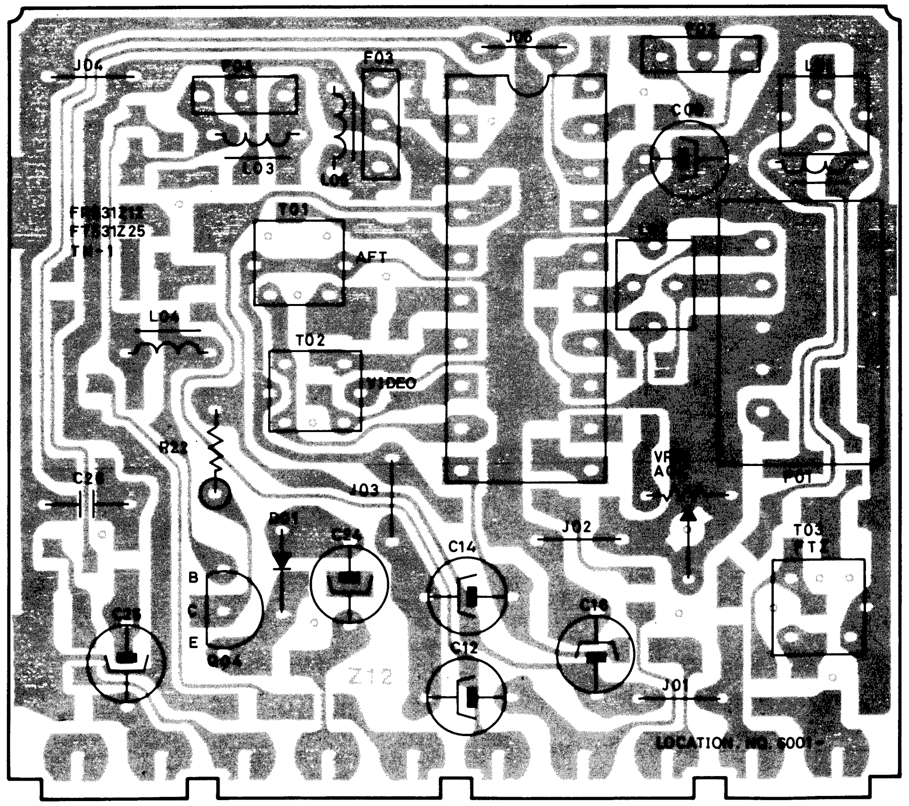

J04
F04
F03
J06
F02
L01
L03
L04
T01
AFT
T02
VIDEO
FR631Z15
FT631Z25
TN-1
L03
L02
R22
C28
J03
D01
C24
C14
C12
J02
VR01 AGC
F01
T03
C29
C25
Q04
-12
J01
LOCATION NO. 6001~

TN-1 Tuner/ZF-Schaltung
TN-1 Tuner/IF Schematic Diagram

*UK Version

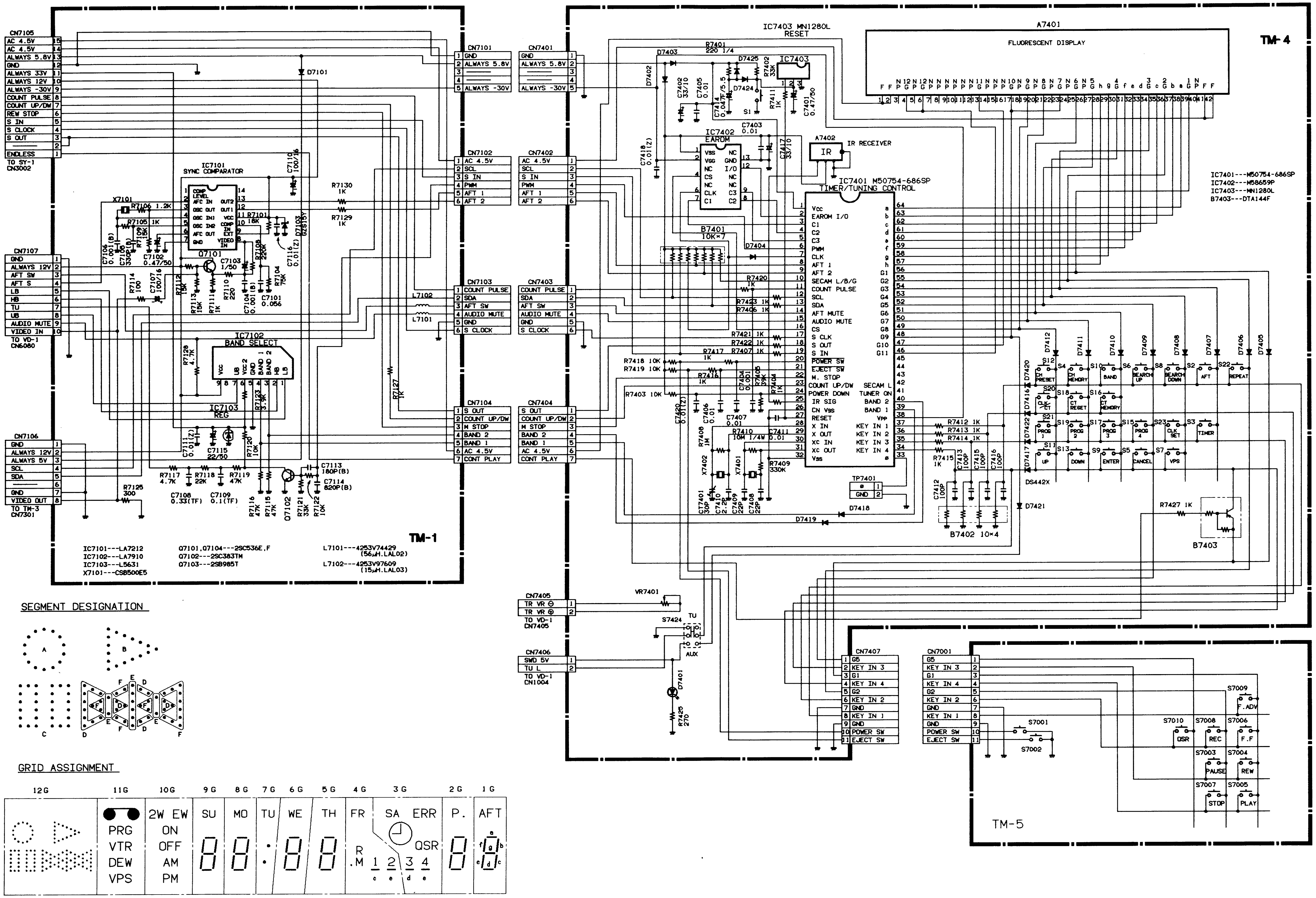

TN-1
IF TO TUNER
R29 3.3K
Q02 2SC2411K BUFFER
R30 1K
R32 510
R31 510
SD SIG
TO VD-1 CN6080 ⑩
STB 12V
C16 47μ/16V
L03 12μ
F04 TPS6.0MB
R20 510
R21 510
Q04 2SC1740 BUFFER
R22 22
R26 150K
C23 0.018μ
R38 2.2K
D01 1SS133
C21 82P
T01
F03 EFC-S6R5MS5
R16 330
Q03 2SA1037K BUFFER
L04 33μ
C22 22P
R25 82
C24 10μ/35V
VIDEO OUT
TO VD-1 CN1509
R23 5.1K
T02
C19 0.018μ
R15 1.8K
C15 0.018μ
R24 5.1K
N.C.
C20 68P
R19 10K
C13 6800P
R28 100K
R39 4.7K
R27 82K
AFT S CURVE
TO VD-1 CN6080 ④
R10 270
IC01 LA7530N
C14 0.1μ/50V
N.C.
Q06 DTC144EK SWITCH
C28 6800P
C11 6800P
R40 1K
AGC TO TUNER
C08 15P
R12 270
R14 2.2K
C09 1μ/50V
C10 1000P
C06 6800P
R33 1.8K
R34 22K
VR01 10K
C12 4.7μ/35V
R07 150
R08 150
R11 470
L02 1.2μ
AUDIO OUT
TO VD-1 R2053
F02 CDA6.0MC26
R13 5.6K
C26 0.015μ
R37 2.4K
C25 10μ/35V
C29 8200P
C07 1000P
R03 7.5K
R05 560
L01 3.9μ
C05 2200P
C03 2200P
Q05 DTC124EK SWITCH
AUDIO MUTE
TO VD-1 L6080
C27 6800P
R01 75
R04 1.5K
R06 22
C04 330P
R09 1K
Q01 AMP 2SC2757
F01 F1035AS
VOLTAGE : STOP MODE
LOCATION NO.6001-

TN-1 Tuner/ZF-Platte
TN-1 Tuner/IF Circuit Board


J06
J05
F04
F03
L03
T01
AFT
T02
VIDEO
L04
R22
C23
J03
C24
C14
J02
C12
C13
B
C
E
Q06
VR01
AGC
T03
J01
Z12
LOCATION NO. 6001-

TM-1, 4, 5 Timer, Display & Abstimmspannungserzeugung-Schaltung
TM-1, 4, 5 Timer, Display & Tuning Control Schematic Diagram

German-Version


TM-1
TM-4
TM-5
CN7105
AC 4.5V
ALWAYS 5.8V
GND
ALWAYS 33V
ALWAYS 12V
ALWAYS -30V
COUNT PULSE
COUNT UP/DW
REW STOP
S IN
S CLOCK
S OUT
ENDLESS
TO SY-1 CN3002
CN7107
AFT SW
AFT S
LB
HB
TU
UB
AUDIO MUTE
VIDEO IN
TO VD-1 CN6080
CN7106
ALWAYS 5V
SCL
SDA
VIDEO OUT
TO TM-3 CN7301
IC7101 SYNC COMPARATOR
IC7102 BAND SELECT
IC7103 REG
X7101
Q7101
D7101
CN7101
CN7102
CN7103
CN7104
CN7401
CN7402
CN7403
CN7404
PWM
AFT 1
AFT 2
S CLOCK
M STOP
BAND 2
BAND 1
CONT PLAY
L7101
L7102
IC7101---LA7212
IC7102---LA7910
IC7103---L5631
X7101---CSB500E5
Q7101,Q7104---2SC536E,F
Q7102---2SC383TM
Q7103---2SB985T
L7101---4253V74429 (56μH.LAL02)
L7102---4253V97609 (15μH.LAL03)
IC7403 MN1280L RESET
IC7402 EAROM
A7402 IR RECEIVER
IC7401 M50754-686SP TIMER/TUNING CONTROL
A7401 FLUORESCENT DISPLAY
B7401 10K×7
B7402 10×4
B7403
DS442X
IC7401---M50754-686SP
IC7402---M58659P
IC7403---MN1280L
B7403---DTA144F
CH PRESET
MEMORY
BAND
SEARCH UP
SEARCH DOWN
AFT
REPEAT
RESET
PROG
CLK SET
TIMER
UP
DOWN
ENTER
CANCEL
VPS
TP7401
CN7405
TR VR ⊕
TR VR ⊖
TO VD-1 CN7405
VR7401
S7424
TU
AUX
CN7406
SWD 5V
TU L
TO VD-1 CN1004
CN7407
CN7001
KEY IN 1
KEY IN 2
KEY IN 3
KEY IN 4
POWER SW
EJECT SW
S7001
S7002
S7009 F.ADV
S7010 QSR
S7008 REC
S7006 F.F
S7003 PAUSE
S7004 REW
S7007 STOP
S7005 PLAY
SEGMENT DESIGNATION
GRID ASSIGNMENT
12G
11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
PRG
VTR
DEW
VPS
2W EW
ON
OFF
AM
PM
SU
MO
TU
WE
TH
FR
SA
ERR
QSR
P.
AFT
R
.M
1 2 3 4

KUNDENDIENST

ITT Graetz

SERVICE

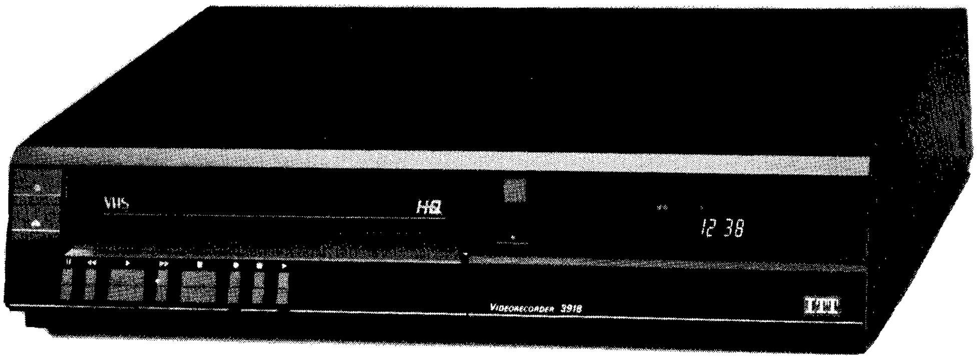
MANUAL

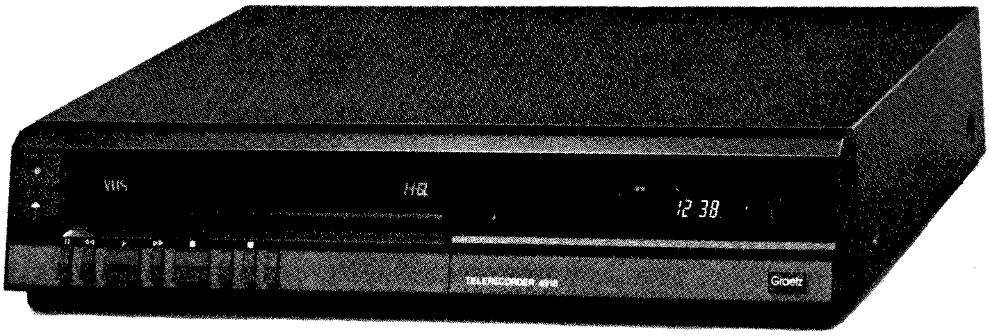
Einstellanweisung der Mechanik und Elektronik
Mechanical and Electronic Adjustments

Teil 2 / Part 2

VR
136-2
1987

ITT VIDEORECORDER 3918 Oscar
Graetz TELERECORDER 4918 Oscar





Dieses Manual gilt in Verbindung mit folgenden Manualen:

VR 136-1	Schaltbilder – Lagepläne Bestell-Nr. 6611 80 29
VR 136-2	Einstellanweisung der Mechanik und Elektronik Bestell-Nr. 6611 80 30
VR 136-3	Ersatzteile-Listen Bestell-Nr. 6611 80 62

This manual is to be used in conjunction with the following Service Manuals:

VR 136-1	Schematic Diagrams – Circuit Boards Part. No. 6611 80 29
VR 136-2	Mechanical and Electronic Adjustments Part. No. 6611 80 30
VR 136-3	Spare Parts Lists Part. No. 6611 80 62

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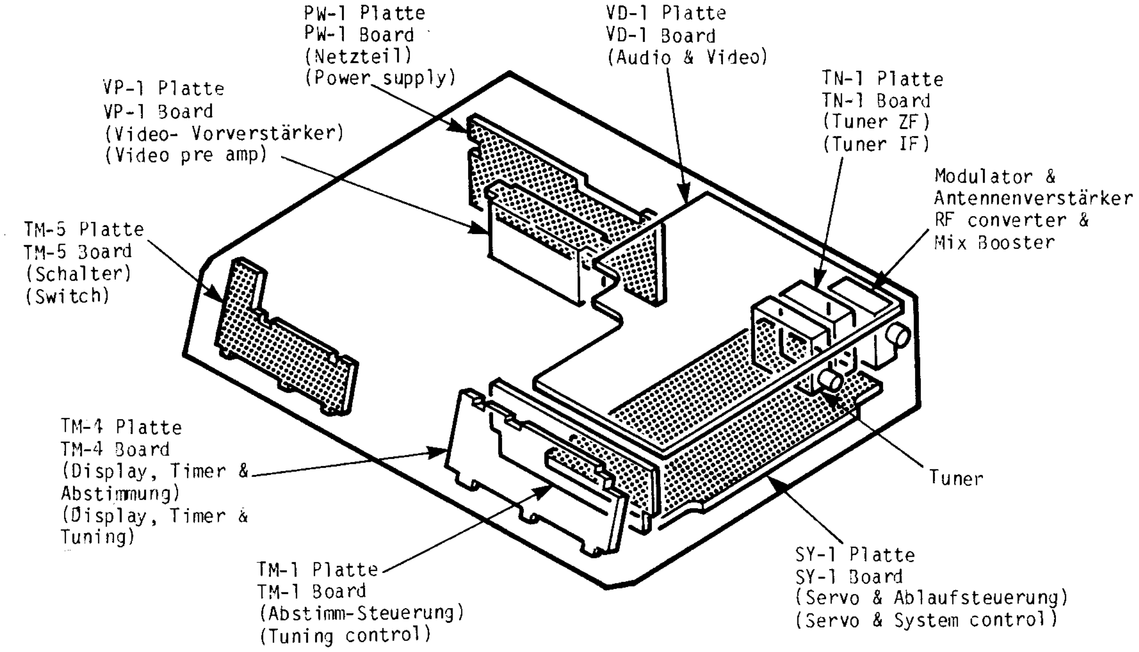
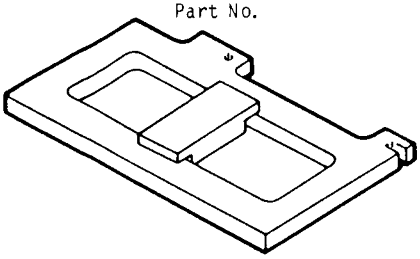
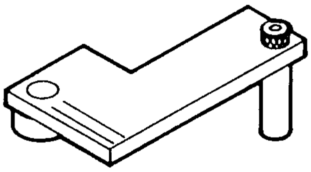
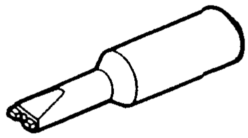
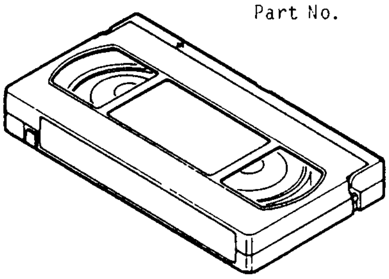
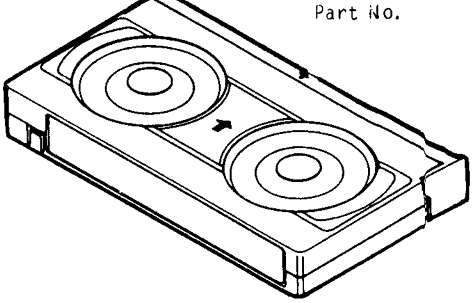
Baugruppen-Lageplan
Location of the Main Boards


PW-1 Platte
PW-1 Board
(Netzteil)
(Power supply)
VD-1 Platte
VD-1 Board
(Audio & Video)
VP-1 Platte
VP-1 Board
(Video- Vorverstärker)
(Video pre amp)
TN-1 Platte
TN-1 Board
(Tuner ZF)
(Tuner IF)
Modulator &
Antennenverstärker
RF converter &
Mix Booster
TM-5 Platte
TM-5 Board
(Schalter)
(Switch)
TM-4 Platte
TM-4 Board
(Display, Timer &
Abstimmung)
(Display, Timer &
Tuning)
Tuner
TM-1 Platte
TM-1 Board
(Abstimm-Steuerung)
(Tuning control)
SY-1 Platte
SY-1 Board
(Servo & Ablaufsteuerung)
(Servo & System control)

Lehren und Werkzeuge
Required Jigs and Tools

VHJ-0001 Bestell-Nr. 1318 89 15 Part No. 	**VHJ-0030** Bestell-Nr. 1318 89 34 Part No. 	**VHJ-0003** Bestell-Nr. 1318 89 13 Part No. 

Bestell-Nr. 1318 88 33 Part No.  MH-2	Bestell-Nr. 1318 88 31 Part No. 

1.1 Mechanisches Auswechseln der wichtigsten Baugruppen

1-1-1 Bremsband und Bandzugarm (siehe Abb. 1-1-1)

1) Feder (a) aushängen.
2) Schraube (b) und Scheiben (c) entfernen und das Bremsband mit dem Bandzugarm abnehmen.
3) Das Bremsband aus dem Bandzugarm herausziehen.
4) Das neue Bremsband in umgekehrter Reihenfolge einbauen.

Hinweis: Darauf achten, daß das neue Bremsband nicht zerkratzt oder verschmiert wird.

5) Bandzugarm-Lage einstellen (siehe Abgleich)

1-1-2 Fädelmotor (siehe Abb. 1-1-2)

1) Anschlußkabel abziehen.
2) Den Riemen entfernen.
3) Die Schrauben (a) herausdrehen und die Motoreinheit abnehmen.
4) Einbau erfolgt in umgekehrter Reihenfolge.

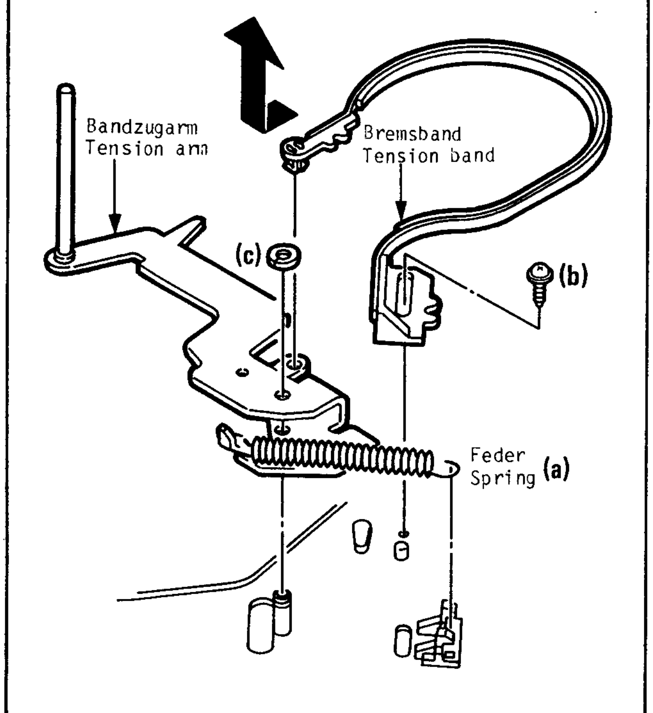


Abb./Fig. 1-1-1

1.1 Mechanism Repair and Parts Replacement

1-1-1 Tension Band and tension arm
(See Fig. 1-1-1)

1) Remove spring (a).
2) Remove the screw (b) and washers (c), and then remove the tension band and tension arm.
3) Disconnect the tension band from the tension arm.
4) Install the new tension band by reversing the removal procedure.

Note: Be careful not to crease or scratch the new tension band.

5) Adjust the position of the back tension lever. (refer to the adjustment procedure)

1-1-2 Loading motor (see Fig. 1-1-2)

1) Disconnect the loading motor connector.
2) Remove the loading motor belt.
3) Remove the screws (a), and then remove the loading motor assembly.
4) Replace the loading motor, and install it in the reverse order of removal.

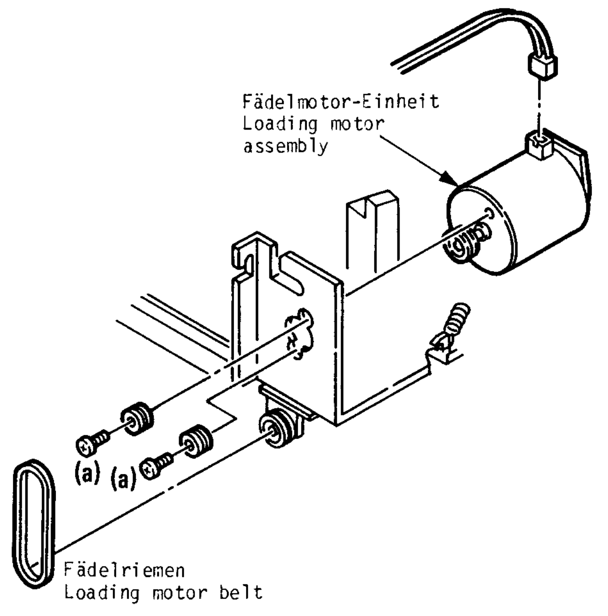


Abb./Fig 1-1-2

1-1-3 Abwickelteller (siehe Abb. 1-1-3)

1) Schraube (a) am Bremsband lösen
2) Scheibe (b), (c) abnehmen und Abwickelteller-Einheit abziehen.

Hinweis: Darauf achten, daß die Unterlagscheiben für die Höheneinstellung nicht verloren gehen.

3) Das alte Öl am Abwickelteller-Bolzen abwischen und mit einem Tropfen Neuem versehen.
4) Wird ein neuer Abwickelteller eingesetzt, muß die Abwickelteller-Höhe richtig eingestellt werden.

1-1-4 Aufwickelteller (siehe Abb. 1-1-3)

1) Scheiben (d), (e) entfernen und Aufwickelteller herausziehen.

Hinweis: Darauf achten, daß die Unterlagscheiben für die Höheneinstellung nicht verloren gehen.

2) Das alte Öl am Aufwickelteller - Bolzen abwischen und mit einem Tropfen Neuem versehen.
3) Wird ein neuer Aufwickelteller eingesetzt, muß die Aufwickeltellerhöhe neu eingestellt werden.

1-1-3 Supply Reel Disk (see Fig. 1-1-3)

1) Remove the screw (a) of brake band.
2) Remove the special washer (b) and washer (c), and then remove the supply reel base.

Note: Be careful not to loose the height adjustment spacer.

3) Wipe off the old oil from the reel shaft by using a cloth moistened with alcohol, and then apply a small amount of new oil.
4) If a new supply reel base is being installed, adjust the reel base height.

1-1-4 Take Up Reel Disk (see Fig. 1-1-3)

1) Remove the special washer (d) and washer (e), and then remove the take-up reel base.

Note: Be careful not to loose the height adjustment spacer.

2) Wipe off the old oil from the reel shaft by using a cloth moistened with alcohol, and then apply a small amount of new oil.
3) If a new take-up reel base is being installed, adjust the reel base height.

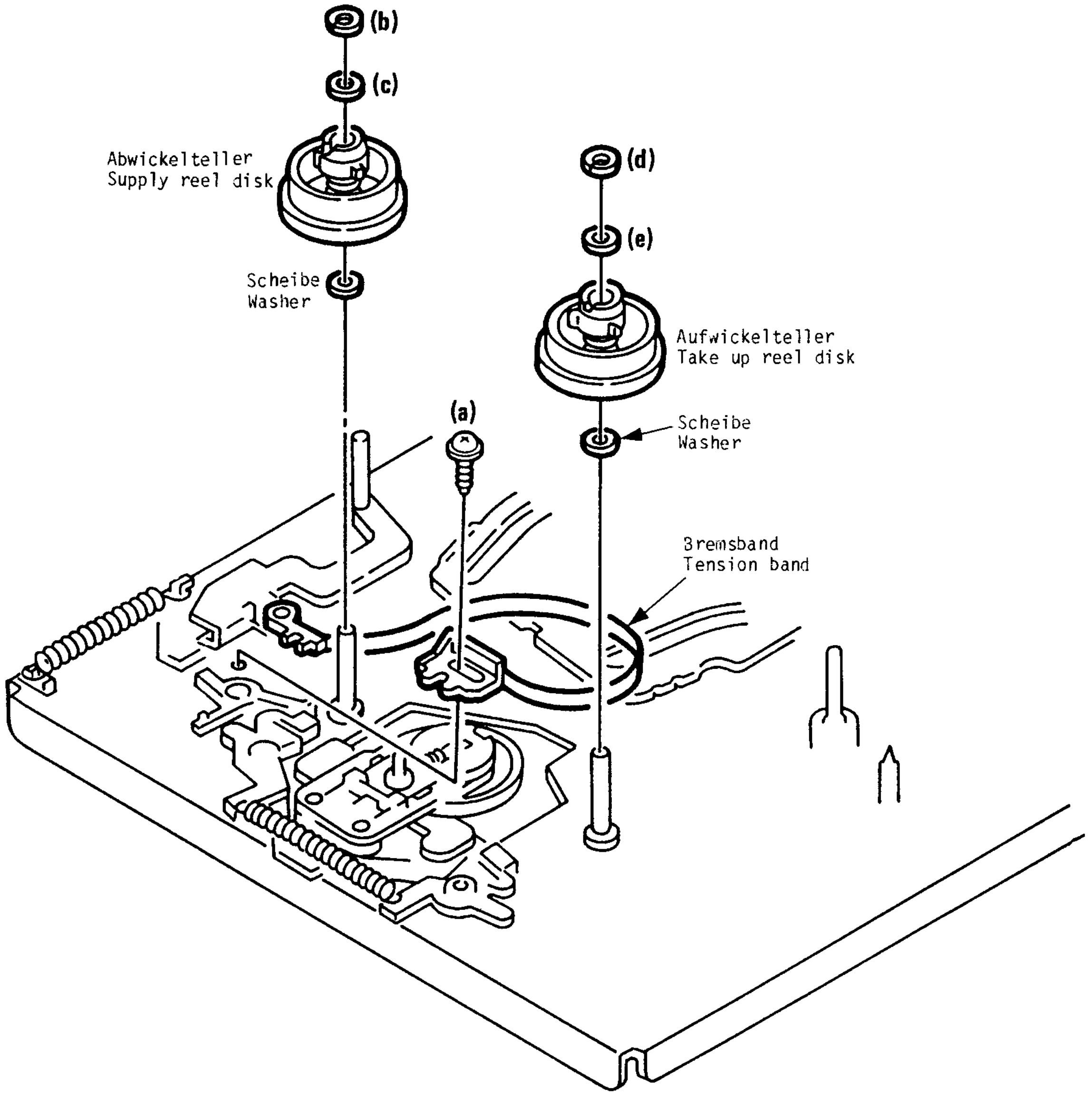


Abb./Fig 1-1-3

1-1-5 Zwischenrad (siehe Abb. 1-1-5)

1) Scheibe (a) entfernen und die komplette Einheit abnehmen.
2) Der Einbau erfolgt in umgekehrter Reihenfolge.

1-1-6 Capstan-Motor (siehe Abb. 1-1-6)

Hinweis:
Recorder in den STOP-Betrieb schalten (siehe Abschnitt 2-2-4 Betriebsartenschalter).
Den Recorder ausschalten.

1) Capstanmotor-Anschlußstecker (a) von der Platte abziehen.
2) Scheibe (b) abziehen, und Cassettenauswurf-Hebel (c) abnehmen.
3) Den Capstan-Riemen (d) aushängen.
4) Die Capstan-Sicherungs-Schrauben (e) herausdrehen und den Motor abnehmen.
5) Der Einbau des neuen Motors erfolgt in umgekehrter Reihenfolge.

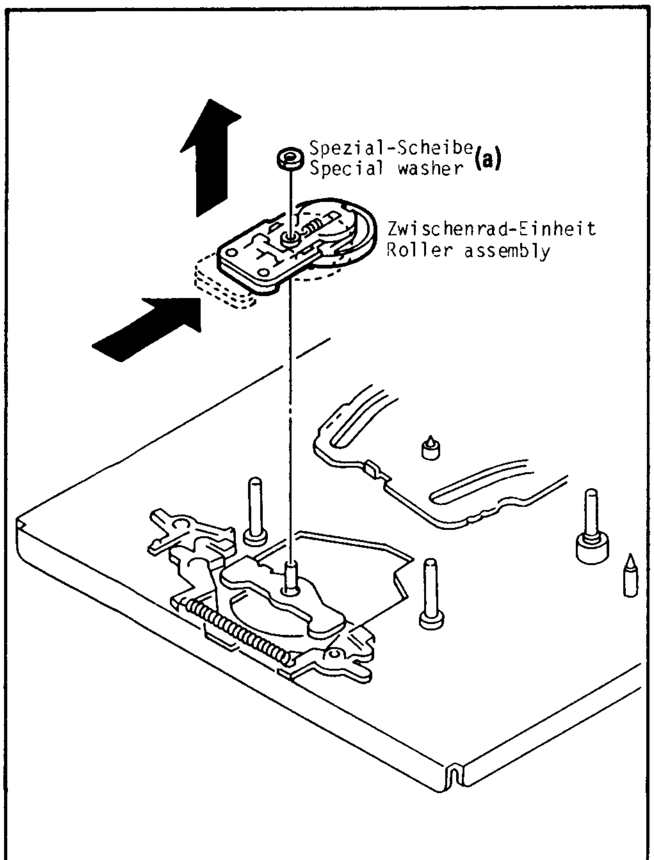

Spezial-Scheibe
Special washer
(a)
Zwischenrad-Einheit
Roller assembly

Abb./Fig 1-1-5

1-1-5 Roller Assembly (see Fig. 1-1-5)

1) Remove the special washer (a), and then remove the roller assembly.
2) Install the new roller assembly by using the reverse order of the removal procedure.

1-1-6 Capstan-Motor (see Fig. 1-1-6

Note: Set the mode detection switch to STOP mode (Refer to item 2-2-4 Mode Detection Switch Position part)
Switch the power off.

1) Disconnect the capstan motor connector (a).
2) Remove the special washer (b), and then remove the eject lever (c).
3) Remove the capstan motor belt (d).
4) Remove the screws (e) securing the capstan motor, and then remove the motor.
5) Install the new capstan motor by using the reverse order of the removal procedure.

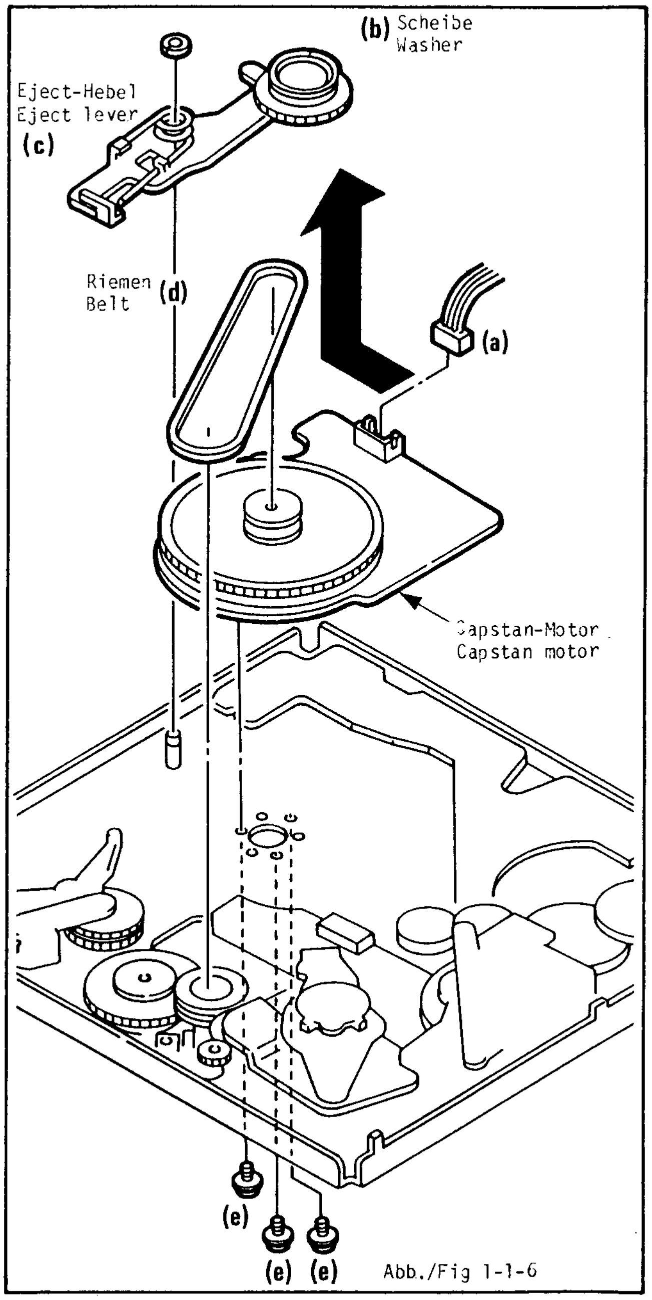

(b) Scheibe
Washer
Eject-Hebel
Eject lever
(c)
Riemen
Belt
(d)
(a)
Capstan-Motor
Capstan motor
(e)
(e) (e)

Abb./Fig 1-1-6

1-1-7 Kopftrommel (siehe Abb. 1-1-7)

1) Schraube (a) herausdrehen und die Massefeder abnehmen.
2) Die Schrauben (b) herausdrehen und die Anschlußdrähte ablöten.

Hinweis: Beim Anlöten auf richtige Anschlußbelegung der Drähte achten.

3) Bandlauf überprüfen.

1-1-8 Kopftrommelmotor (Rotor) (siehe Abb. 1-1-8)

1) Rotor-Sicherungsschrauben (a) herausdrehen und Rotor abziehen
2) Kopftrommel-Motor Sicherungsschrauben (b) herausdrehen und Motor abnehmen.
3) Der Einbau erfolgt in umgekehrter Reihenfolge.

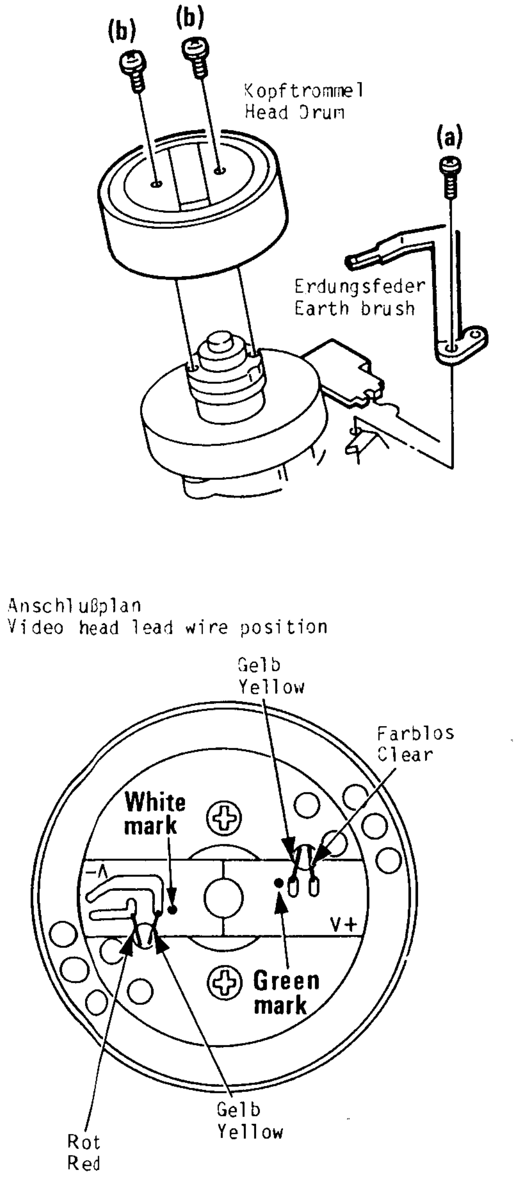

(b)
(b)
Kopftrommel
Head Drum
(a)
Erdungsfeder
Earth brush
Anschlußplan
Video head lead wire position
Gelb
Yellow
Farblos
Clear
White mark
V+
Green mark
Gelb
Yellow
Rot
Red

Abb./Fig 1-1-7

1-1-7 Head Drum (see Fig 1-1-7)

1) Remove the screw (a), and then remove the earth brush.
2) Remove the screws (b) which hold the upper drum, and then remove the soldered lead wire.

Note: Be careful to solder the lead wires at the correct position.

3) Check the tape path.

1-1-8 Rotor and Drum Motor (see Fig. 1-1-8)

1) Remove the screws (a) securing the rotor, and then remove the rotor.
2) Remove the screws (b) securing the drum motor, and then remove the drum motor.
3) Install the new drum motor by using the reverse order of the removal procedure.

Hinweis: Beim Einbau der Kopfscheibe muß das Kleine Loch mit dem Loch übereinstimmen.
Note: Make sure of positioning the Smallhole of rotor and the hole of rotor-disc

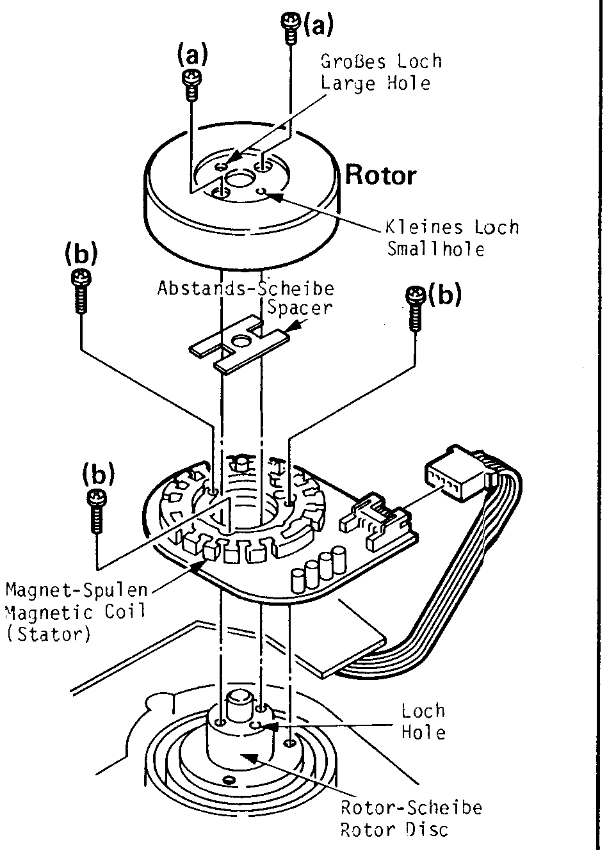

(a)
(a)
Großes Loch
Large Hole
Rotor
Kleines Loch
Smallhole
(b)
Abstands-Scheibe
Spacer
(b)
(b)
Magnet-Spulen
Magnetic Coil
(Stator)
Loch
Hole
Rotor-Scheibe
Rotor Disc

Abb./Fig 1-1-8

1-1-9 Kopftrommel-Einheit (siehe Abb. 1-1-9)

1) Die Schraube (a) entfernen und die Massefeder abnehmen.
2) Anschluß-Drähte an der Platte MC-30 ablöten.
3) Die Schrauben (b) herausdrehen und die komplette Einheit abziehen.

Darauf achten daß die Video-Köpfe nicht berührt werden

4) Der Einbau erfolgt in umgekehrter Reihenfolge zum Ausbau.

1-1-9 Drum Assembly (see Fig 1-1-9)

1) Remove the screw (a), and then remove the earth brush.
2) Remove the soldered lead wires of MC-30.
3) Remove the screws (b), and then remove the drum assembly.

Be careful not to touch the head tips.

4) Install the new drum assembly by using the reverse order of the removal procedures.

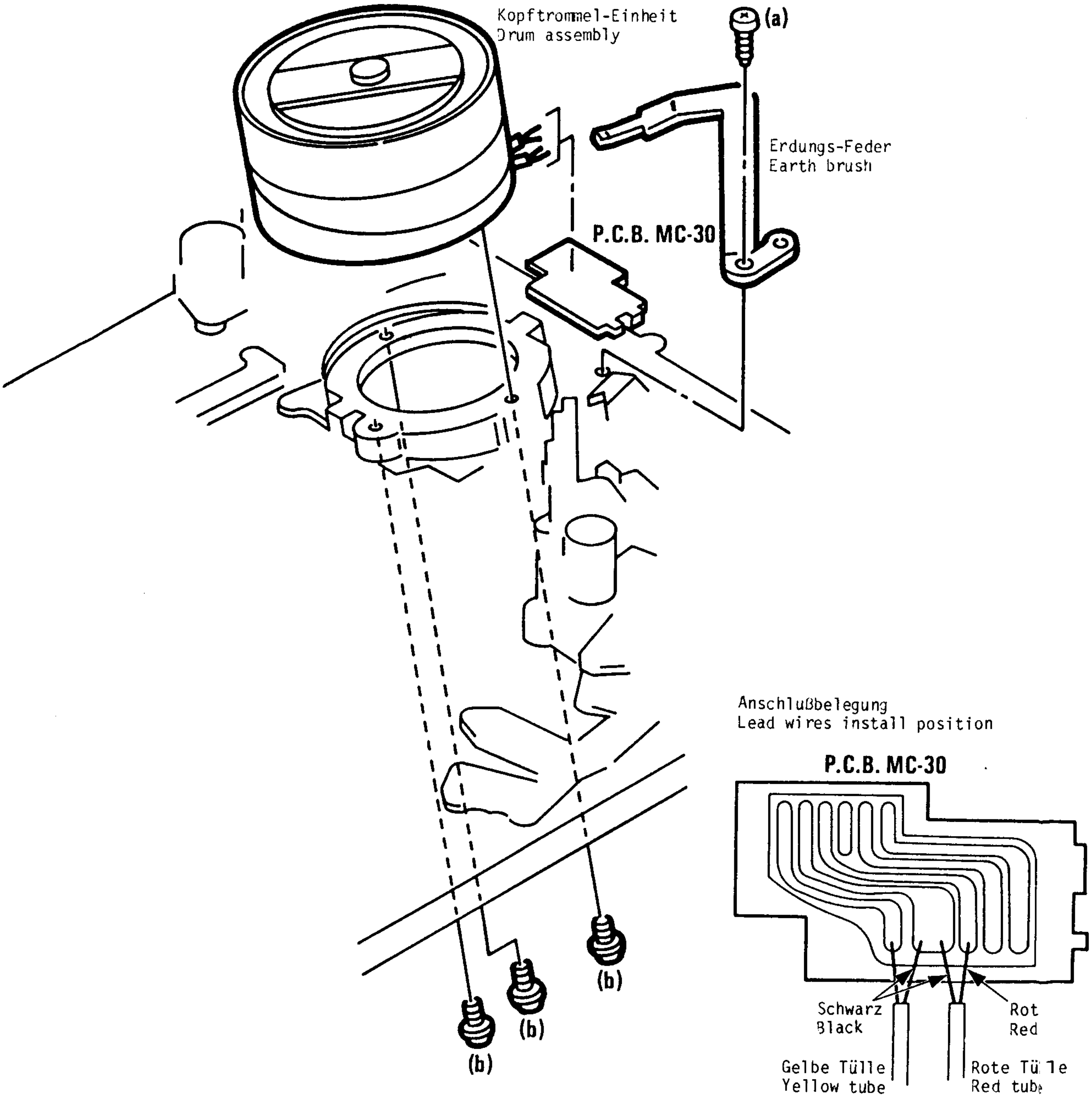

Kopftrommel-Einheit
Drum assembly
(a)
Erdungs-Feder
Earth brush
P.C.B. MC-30
Anschlußbelegung
Lead wires install position
P.C.B. MC-30
Schwarz
Black
Rot
Red
Gelbe Tülle
Yellow tube
Rote Tülle
Red tube
(b)
(b)
(b)

Abb./Fig 1-1-9

1-1-10 Audio/Synchronkopf (siehe Abb.1-1-10)

1) Mutter (a) und Hülse (b) entfernen. Die Anschlußstecker abziehen.
2) Neuen Audio/Synchronkopf einsetzen.
3) Bandlauf neu einstellen.

1-1-11 Gesamtlöschkopf (siehe Abb. 1-1-11)

1) Sprengring (a) und Mutter (b) lösen. Die Bandberuhigungsrolle abziehen.
2) Anschlußstecker abziehen
3) Die Gesamtlöschkopf-Einheit abziehen
4) Neue Einheit einsetzen

1-1-10 Audio/Control Head Assembly (see Fig. 1-1-10)

1) Remove the nut (a) and sleeve (b) which hold the audio/control head assembly, and then disconnect the two connectors.
2) Install the new audio/control head assembly.
3) Adjust the tape path.

1-1-11 Full Erase Head Assembly (see Fig. 1-1-11)

1) Remove the spring (a) and nut (b), and the remove the impedance roller.
2) Disconnect the 2 pin connector.
3) Remove the full-erase head assembly.
4) Install the new full-erase head assembly.

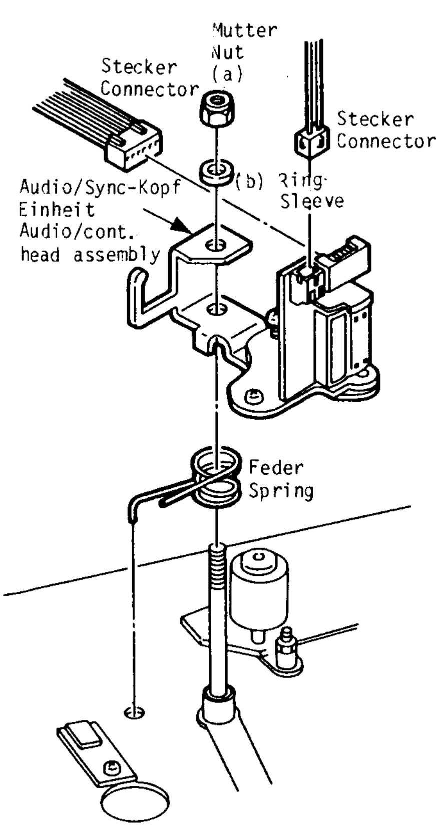

Mutter
Nut
(a)
Stecker
Connector
Stecker
Connector
Audio/Sync-Kopf
Einheit
Audio/cont.
head assembly
(b) Ring
Sleeve
Feder
Spring

Abb./Fig 1-1-10

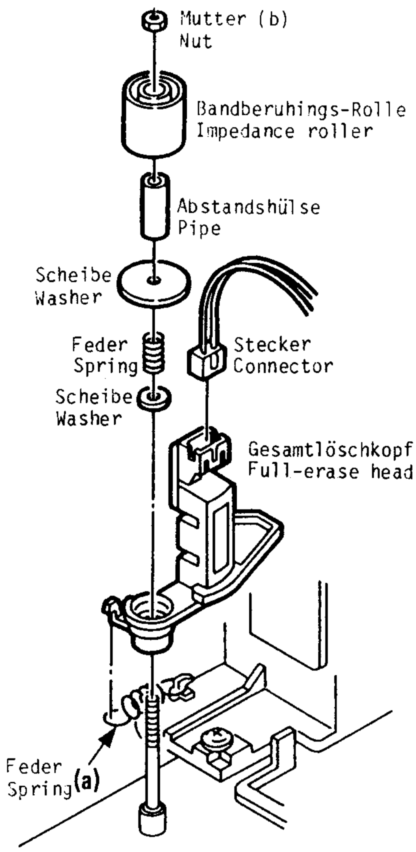

Mutter (b)
Nut
Bandberuhings-Rolle
Impedance roller
Abstandshülse
Pipe
Scheibe
Washer
Feder
Spring
Stecker
Connector
Scheibe
Washer
Gesamtlöschkopf
Full-erase head
Feder
Spring (a)

Abb./Fig 1-1-11

2.1 Abgleich-Vorbereitungen (siehe Abb. 2-1-1)

Ohne eingelegte Cassette die Mechanik in Betrieb setzen.

1) Die Bandanfang-Endesensoren mit schwarzem Klebeband abkleben.
2) Eine Cassette in den Cassettenschacht einschieben, und sobald sich die Cassettenfahrstuhlmechanik bewegt, die Cassette wieder aus dem Schacht herausdrücken. Der Cassettenschacht fährt dann nach unten und verbleibt in dieser Position.
3) Jeder Betriebszustand läßt sich somit einschalten. Im Betriebs-Zustand Sichtbarer-Suchlauf Rückwärts, muß von Hand der Aufwickelteller gedreht werden, da sonst der Recorder in den Fehler-Code übergeht und abschaltet.
Recorder ausschalten und wieder einschalten.

2.1 Preparations for adjustment (see Fig. 2-1-1)

How to operat the mechanism without a cassette tape

1) Cover the FWD sensor and REW sensor using a piece of black vinyl tape or similar material so that light cannot be received.
2) Insert the tape cassette by hand, and then pull it out when the cassette tray begins to move.
3) In this condition, each mode can be operated. Make sure to turn the Take-up reel disk while operating the recorder in REW mode. In case of block motor function, switch the power switch off and on again.

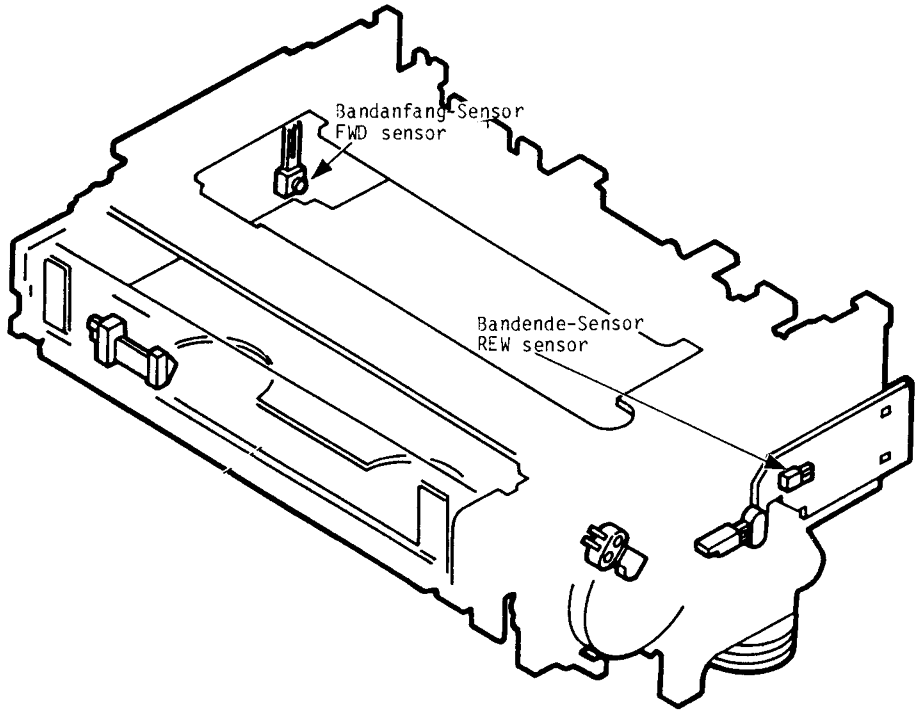


Abb./Fig 2-1-1

2.2 Einstellarbeiten

2-2-1 Wickeltellerhöhen (siehe Abb. 2-2-1)

Wird einer der Wickelteller ausgebaut, muß die Höhe neu eingestellt werden.

1) Höheneinstellehre (VHJ-0001) aufsetzen und in die entsprechende Pfeilrichtung verschieben.
2) Der Wickelteller darf die Fläche A nicht berühren, muß aber auf der Fläche B aufliegen.
3) Berührt er die Fläche A, muß eine Abstandsscheibe entfernt werden.
4) Liegt er auf der Fläche B nicht auf, so muß eine Abstandsscheibe hinzugefügt werden.
5) Höheneinstellung nochmals überprüfen.

2.2 Adjustment

2-2-1 Reel disk height (see Fig. 2-2-1)

If the supply or take up reel disk is replaced, it will be necessary to adjust the reel disk height.

1) Attach the cassette stand plate gauge (VHJ-0001) and slide the gauge in the direction of the arrows.
2) Confirm that, when the gauge stops, the reel bases are not in contact with surface A of the plate and are in contact with surface B.
3) If the reel base is in contact with surface A, remove a spacer and check again.
4) If the reel base is not in contact with surface B, add a spacer and check again.

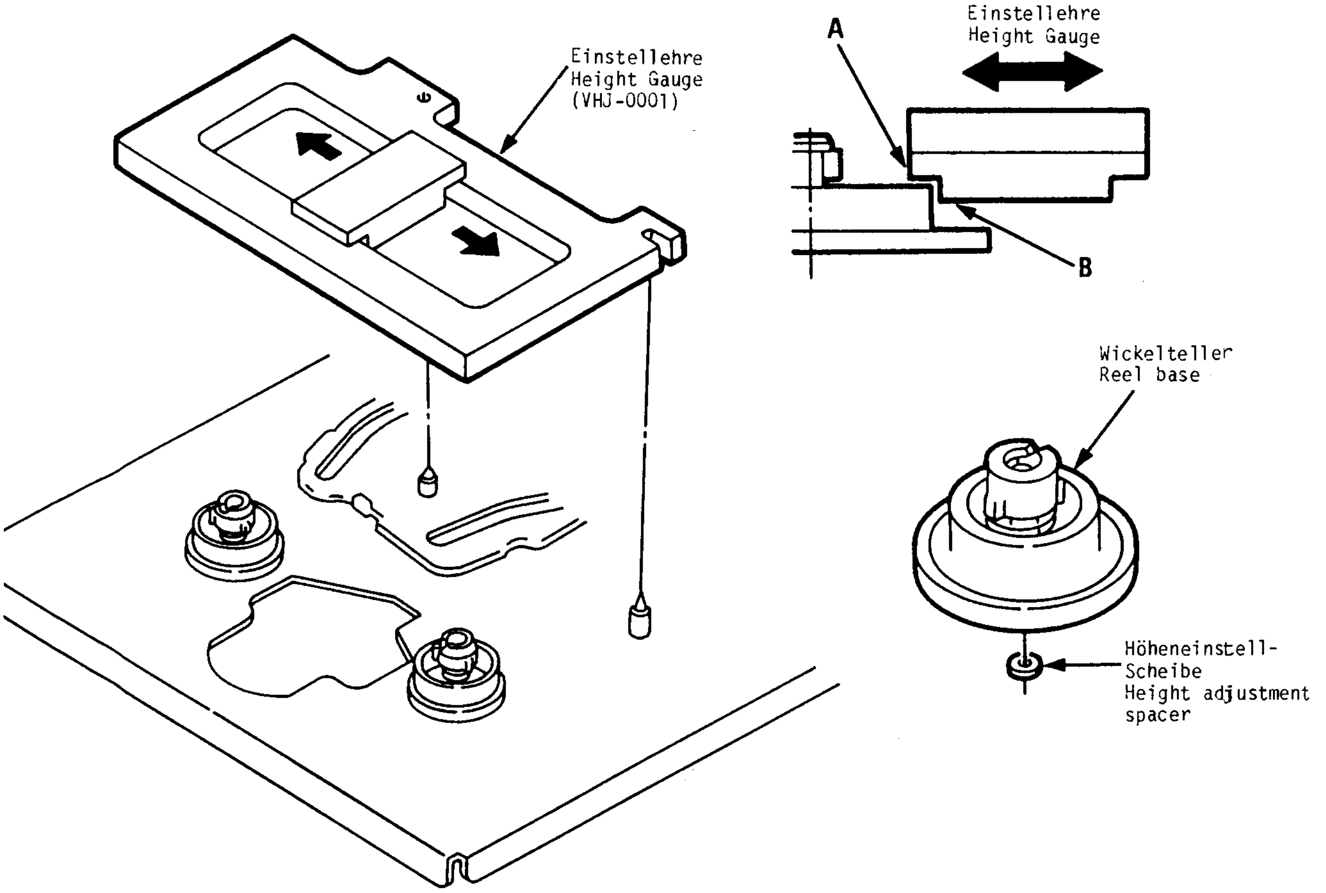

Einstellehre
Height Gauge
(VHJ-0001)
A
Einstellehre
Height Gauge
B
Wickelteller
Reel base
Höheneinstell-
Scheibe
Height adjustment
spacer

Abb./Fig 2-2-1

2-2-2 Bandzug-Fühlstift Lageüberprüfung (siehe Abb. 2-2-2)

1) Ohne eingelegte Cassette in Wiedergabe gehen und nach dem Einfädeln den Netzstecker ziehen.
2) Die Einstellehre VHJ 0030 aufsetzen.
3) Der Bandzugfühlstift muß zwischen den beiden Markierungen auf der Einstellehre liegen.
4) Ist dies nicht der Fall, mit Schraube (a) den Fühlstift zwischen die Markierungen bringen.
5) Einstellehre wieder entfernen.

2-2-2 Tension pole position check (see Fig. 2-2-2)

1) Begin the playback mode without inserting a tape cassette. After loading finishes, disconnect the power cord from the power outlet.
2) Attach the back-tension lever position-confirmation gauge VHJ-0030.
3) Check to be sure that the back-tension lever is within the marking line on the back-tension lever position-confirmation gauge.
4) If is not, adjust the screw (a) so that it is with in the line.
5) Remove the back-tension lever position-confirmation gauge.

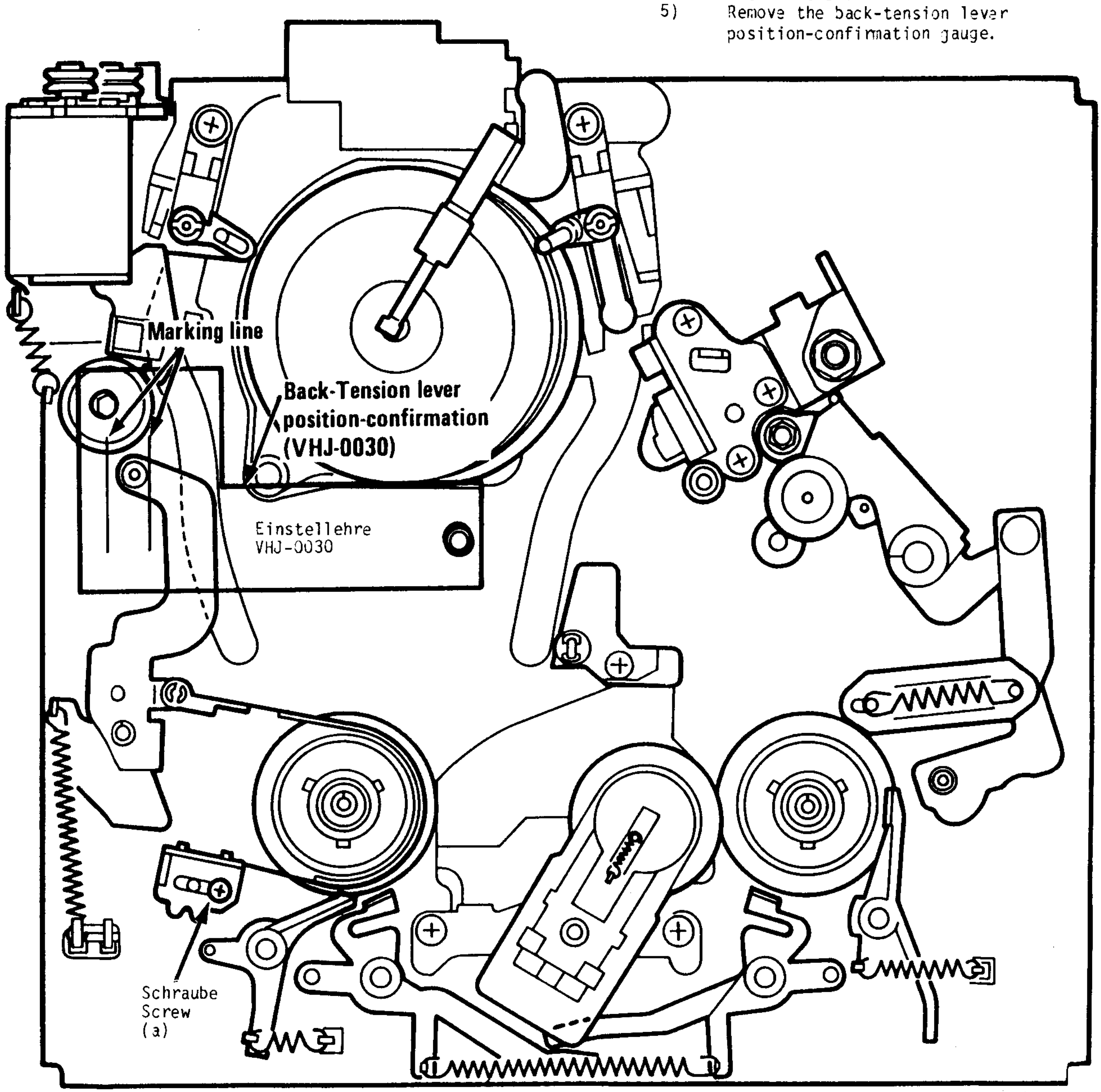

Marking line
Back-Tension lever position-confirmation (VHJ-0030)
Einstellehre VHJ-0030
Schraube
Screw
(a)

Abb./Fig 2-2-2

Draufsicht
Bottom View

2-2-3 Überprüfung des Bandzugs (siehe Abb. 2-2-3)

1) Drehmomentmesscassette (Bestell-Nr. 1318 88 81) aufsetzen und den Recorder auf PLAY stellen.
2) Überprüfen ob das Drehmoment zwischen 37-57 g/cm liegt.
3) Ist dies nicht der Fall, muß der Bandzug eingestellt werden.
   a) Drehmomentmesscassette herausnehmen.
   b) Position der Spiralfeder ändern.
4) Cassette wieder einlegen und Wert ablesen.

2-2-3 Back Tension Check (See Fig. 2-2-3)

1) Load a cassette torque meter (part.No. 1318 88 81) and set to the PLAY mode.
2) Check whether or not the back-tension torque value is within 37-57 g/cm.
3) If not, the bracket position should be adjusted
   a) Press the Eject button and eject the cassette torque meter.
   b) Change the position of the spring coil.
4) Load the cassette torque meter once again and check the back-tension torque value.

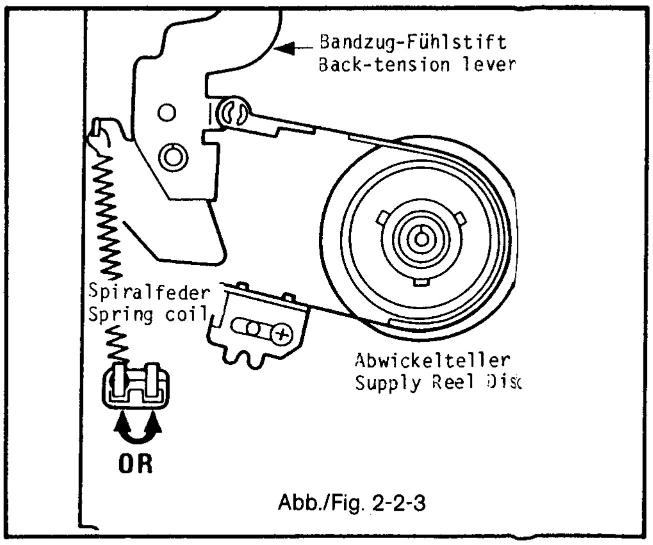

Bandzug-Fühlstift
Back-tension lever
Spiralfeder
Spring coil
Abwickelteller
Supply Reel Disc
OR

Abb./Fig. 2-2-3

2-2-4 Getriebe & Lage des Betriebsarten-Schalters (siehe Abb. 2-2-4)

Falls das Getriebe, Steuerscheibe oder der Betriebsarten-Schalter gewechselt werden müssen, wird das Einjustieren der einzelnen Zahnradpositionen notwendig.
Daher unbedingt darauf achten, daß der Recorder im STOP-Betrieb stehen muß, bevor irgendwelche Antriebsteile ausgetauscht werden.
Falls sich der Recorder im EJECT-Betrieb (nach ausgeworfener Cassette) befindet, muß die Antriebs - Steuereinheit in den STOP-Betrieb gefahren werden.
Dazu das Schneckenwellen-Rad in Pfeilrichtung drehen.
Der STOP-Zustand ist dann erreicht, wenn der Nocken des Betriebsarten-Schalters die in Markierung (a) und (b) gezeigte Positionen erreicht haben.
Wird das Nockenrad II ausgetauscht, muß die Spiralfeder (c) beidseitig ausgehängt werden. Recorder im STOP-Betrieb .
Unbedingt die Einbau-Markierungen (A), (B) und (C), sowie auch die Positionen unter der Bezeichnung (a) und (b) beachten!
Stimmen die Relationen zwischen den Antriebsteilen nicht überein, funktioniert die Ablaufsteuerung fehlerhaft.

2-2-4 Gear & Mode Detection Switch Positionning (see Fig. 2-2-4)

If the gear, cam and mode-detection switch, etc. is removed or replaced, it will be necessary to make each of the position alignments.
Therefore, before removing these parts, be sure to first set the unit to the STOP mode, and then remove the parts. If the gear and mode-detection switch position will be in the EJECT mode (after cassette is out), move from the EJECT mode to the STOP mode by turning the worm gear aasembly in the arrow direction as shown in the fig.2-2-4.
The STOP mode is where the notch position of the mode-detection switch and the position of the hole mark of cam gear II match together as shown in (a) and (b).
If camgear II is removed, be sure, before removing it, to first remove spring coil (c) for both of the main brakes while the Recorder is in the STOP mode.
The installation order (A), (B) and (C) is to be followed for installation, being sure to follow points (a) and (b) for each.
If the mode position of the mode-detection switch or the mark position between each gear is not correct, an operation malfunction will result.

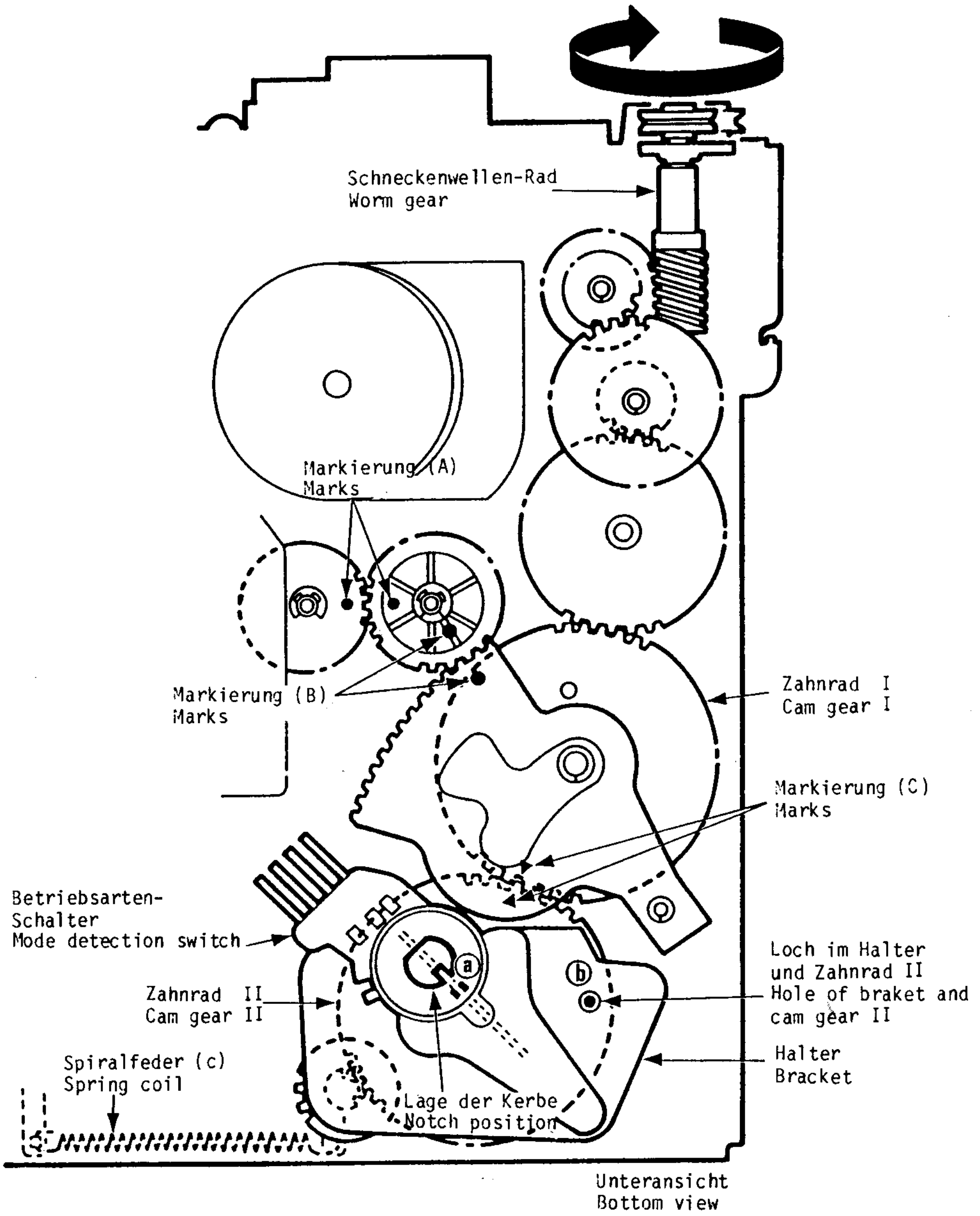

Schneckenwellen-Rad
Worm gear
Markierung (A)
Marks
Markierung (B)
Marks
Zahnrad I
Cam gear I
Markierung (C)
Marks
Betriebsarten-Schalter
Mode detection switch
Zahnrad II
Cam gear II
Loch im Halter und Zahnrad II
Hole of braket and cam gear II
Halter
Bracket
Spiralfeder (c)
Spring coil
Lage der Kerbe
Notch position
a
b
Unteransicht
Bottom view

Abb./Fig 2-2-4

2-2-5 Drehmoment Überprüfung

2-2-5 Checking the torque

Mode	Torque
PLAY	70 ~ 130g · cm
F-SEARCH	80 ~ 160g · cm
R-SEARCH	120 ~ 220g · cm
FWD/REW	700g · cm or more
UNLOADING	70 ~ 130g · cm

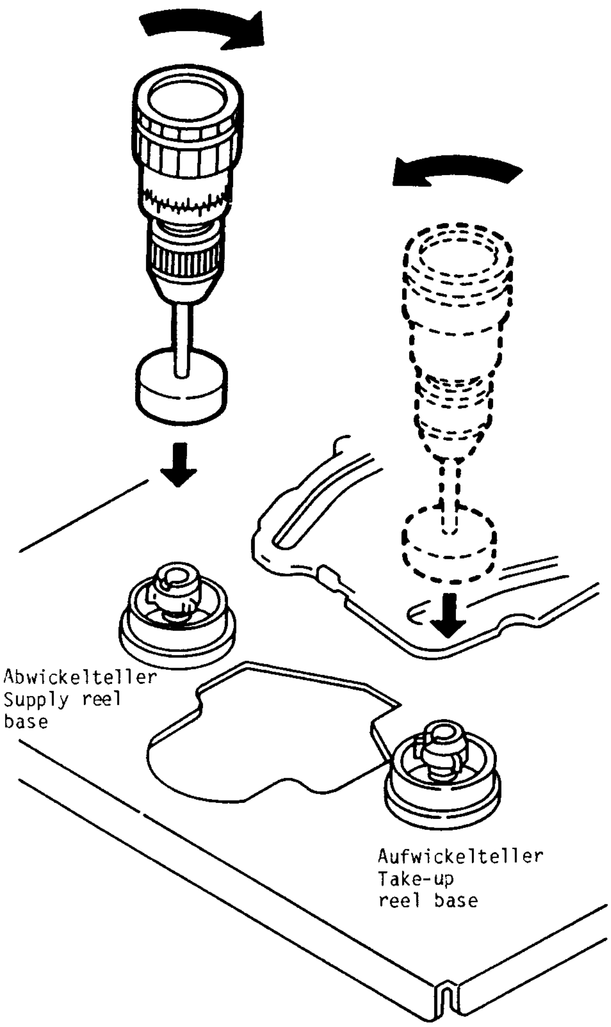

Abwickelteller
Supply reel
base
Aufwickelteller
Take-up
reel base

Abb./Fig 2-2-5

2-2-6 Überprüfung und Einstellung des Bandlauf-Systems (siehe Abb. 2-2-6)

Das Bandlauf-System wurde im Werk präzise eingestellt, und bedarf keiner Einstellung.
Diese Arbeiten werden erst dann notwendig, wenn nach längerer Betriebszeit ein Teil des Bandlauf-Systems ausgetauscht wird.

1) Reinigung des Bandlauf-Systems
Bandreste, Staub und Schmutz sammeln sich im Bandlauf-System an. Das Bandlauf-System sollte nach der Reinigung der Bandkontaktstellen überprüft werden.

2) Testpunkte für die Bandlauf-Überprüfung
Die Einstellungen sollten unter Beachtung der Video-FM-Pakete und des Audio-Signals vorgenommen werden.

Oszilloskop auf der Platte VD-1 folgendermaßen anschließen:

Pin (1): Masse
Pin (2): FM-Signal
Pin (3): Kopfumschaltimpuls (Triggerpuls)

Beim Oszillografieren des Audiosignals sollte der Kanal an der AV-Platte (Scart) VD-1 angeschlosssen werden.

3) Einstellung des Bandlauf-Systems

Folgende Punkte, unter Benutzung einer 120-er Cassette (Bandanfang-ende), überprüfen.

* Das Band darf im Wiedergabe-Betrieb am Bandein-auslauf nicht auf oder -ablaufen. Sind Abweichungen vorhanden, müssen die Ein-Auslaufbolzen in ihrer Höhe eingestellt werden. Darauf achten, daß im Wiedergabe-Betrieb keine Falten oder Schleifen am Bandeinlauf-auslauf auftreten.

4) Bandeinlauf-Bolzen und Auslauf-Bolzen Einstellung.
Mit dem Tracking-Regler das FM-Paket auf Maximum einstellen. Die Bolzen nach dem Lösen nacheinander vorsichtig verdrehen, bis die Hüllkurve eine flache Form aufweist.

2-2-6 Checking and Adjusting the tape transport system (see Fig. 2-2-6)

The tape transport system has already been precisely adjusted by the manufacturer, and therefore no adjustment should normally become necessary.
Such checking and adjustment may however become necessary when, after long use, a component part of the tape-transport system is replaced etc.

1) Cleaning the tape-transport system.
Tape residue, dust and dirt may accumulate in the tape-transport system after cleaning the tape contact surfaces.

2) Test points when adjusting tape transport.
Make the tape transport adjustments while monitoring the envelope (RF output waveform) and the audio output waveform.

When monitoring the envelope connect the oscilloscope at the VD-1 board:

Pin (1): GND
Pin (2): FM signal
Pin (3): Head Switching pulse (trigger)

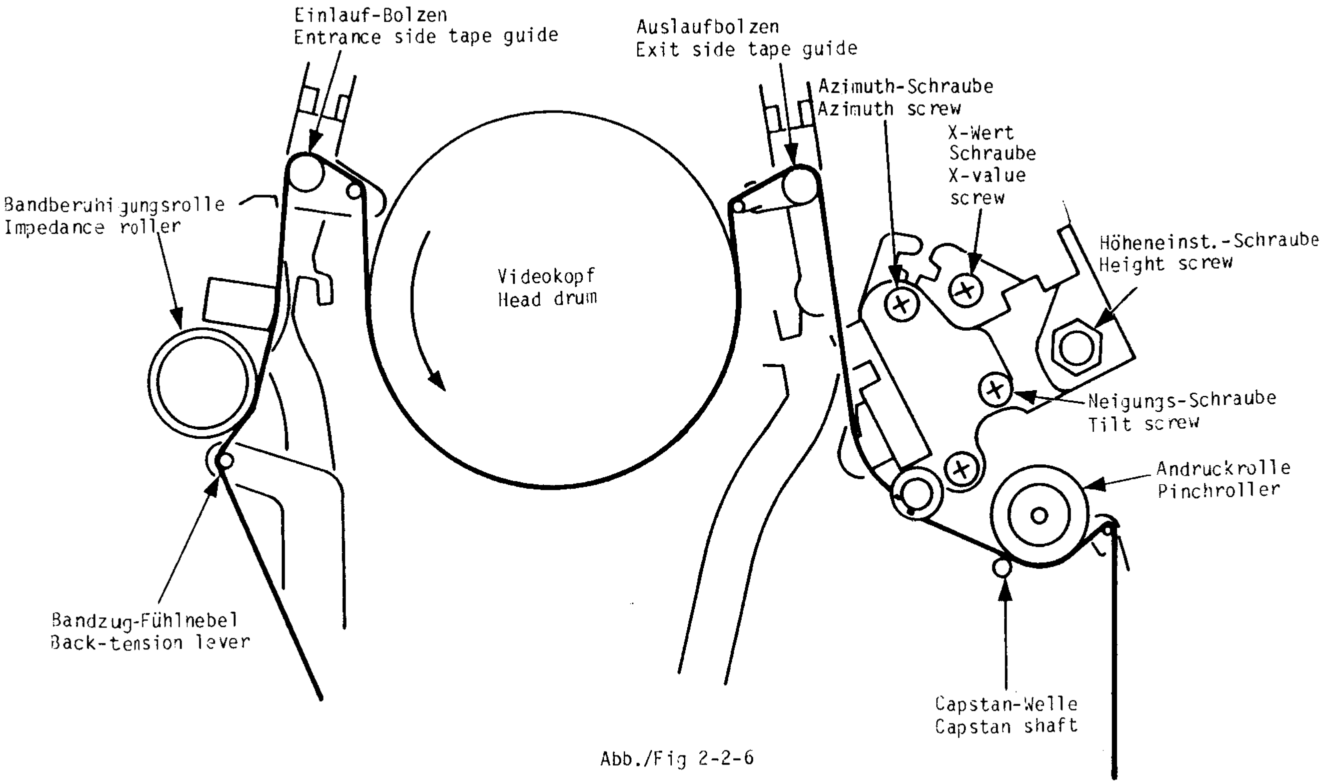
When monitoring the audio output waveform, connect the oscilloscope to the audio output terminal on the VD-1 board (rear panel terminal).

3) Adjusting the tape-transport system

Check the following points by using the two end parts of a T 120 tape..

* Check to be sure that, during playback, the tape is not out of position upward or downward (from the lead) at the drum entrance and drum exit. If there is any positional deviation, adjust the height of the entrance and/or exit guide.

4) Intake guide and Outtake guide adjustment
Turn the tracking control to obtain the maximum FM envelope. Tighten the intake and outtake guides after alternately loosening them, and adjust to the point where the envelope is flat.



Einlauf-Bolzen
Entrance side tape guide
Auslaufbolzen
Exit side tape guide
Azimuth-Schraube
Azimuth screw
X-Wert
Schraube
X-value
screw
Höheneinst.-Schraube
Height screw
Bandberuhigungsrolle
Impedance roller
Videokopf
Head drum
Neigungs-Schraube
Tilt screw
Andruckrolle
Pinchroller
Bandzug-Fühlnebel
Back-tension lever
Capstan-Welle
Capstan shaft

Abb./Fig 2-2-6

5) Audio-Synchronkopf-Einstellung

a) MH-2 Testcassette einlegen und Recorder auf PLAY stellen. Mit der Azimuth-Schraube auf Audio-Pegel Maximum einstellen

b) Mit der Höheneinstellschraube den Kopf so einstellen, daß die sichtbare Fläche (A) des Audio-Kopfes gleichgroß wie die sichtbare Fläche (B) des Synchronkopfes ist.

c) Verändert sich heirbei der Audipegel, muß die Neigungsschraube um ca. 90° gedreht werden. Abgleichschritte a) und b) nochmals wiederholen.

d) Tracking-Regler in Mittenposition und die Schraube X-Position in Richtung FM-Packet Maximum verstellen.

6) Abschließender Test

Bei Wiedergabe und im Suchlaufbetrieb nochmals den Bandtransport auf Schlaufenbildung. sowie das FM-Paket auf Einbrüche untersuchen; ggf. Abgleichschritte 3-5 nochmals wiederholen.

5) Audio/Control Head Adjustment

a) Insert the MH-2 testcassette and adjust the azimuth screw to obtain the maximum audio level.

b) Adjust the head height. Adjust so that the upper part (A) of the audio head and lower part (B) of the control head can be seen equally.

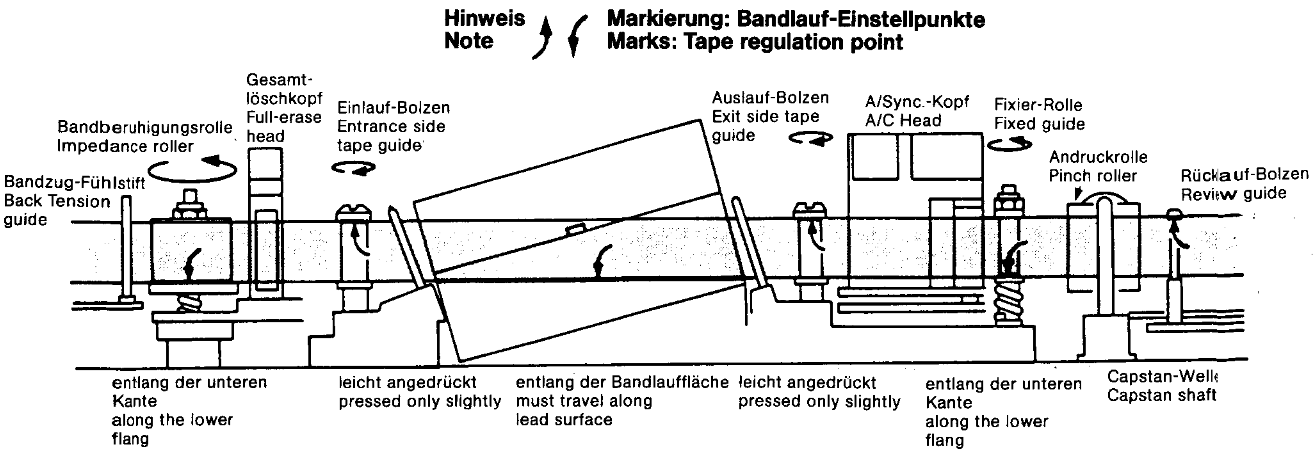
c) If the audio level fluctuates, tighten the tilt screw within a range of 90°, and again make the adjustments in items a) and b).

d) With the tracking control at the center position, adjust the X-Position screw so that the waveform observed on the oscilloscope is maximized.

6) Finally Checks

During Playback and R-Search check for tape creasing at each guide and also check the envelope during Playback of flat waveform. If necessary, repeat steps 3-5 again.

Bandlauf-Kontrolldiagramm
Tape Travel Check Diagram


Hinweis
Note
Markierung: Bandlauf-Einstellpunkte
Marks: Tape regulation point
Gesamt-löschkopf
Full-erase head
Einlauf-Bolzen
Entrance side tape guide
Bandberuhigungsrolle
Impedance roller
Bandzug-Fühlstift
Back Tension guide
Auslauf-Bolzen
Exit side tape guide
A/Sync.-Kopf
A/C Head
Fixier-Rolle
Fixed guide
Andruckrolle
Pinch roller
Rücklauf-Bolzen
Review guide
entlang der unteren Kante
along the lower flang
leicht angedrückt
pressed only slightly
entlang der Bandlauffläche
must travel along lead surface
leicht angedrückt
pressed only slightly
entlang der unteren Kante
along the lower flang
Capstan-Welle
Capstan shaft

2. Elektrischer Abgleich

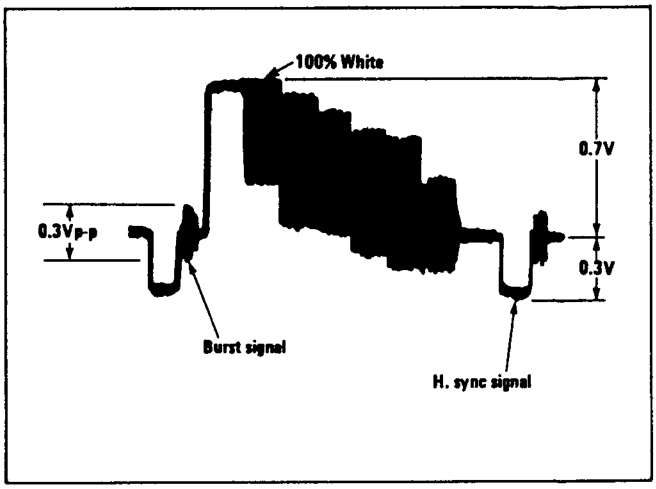
Erforderliche Meß-und Abgleichmittel

1. Farbfernsehgerät oder Monitor
2. Zweistrahloszilloskop, Bandbreite 10 MHz
3. Tongenerator
4. NF-Millivoltmeter
5. Digitalvoltmeter
6. Farbbalkengenerator
7. Abgleichband MH-2
8. Frequenzzähler

2. Electrical adjustments

Required test equipment and jigs

1. Color television or monitor
2. Oscilloscope, wide-band, dual trace, triggered delayed-sweep
3. Audio signal generator
4. Audio meter
5. Digital voltmeter
6. Signal generator: PAL color bar, stairstep
7. Alignment tape MH-2
8. Frequency counter



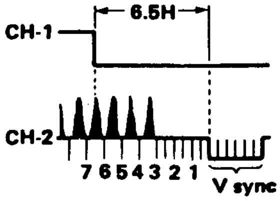
Da das HF-Eingangs-Signal zum Abgleich genommen wird, sind die Spezifikationen des ZF-Ausgangs-Signals wie die Abb. zeigt zu beachten. An den Antenneneingang einen Farbbalkengenerator anschließen. Oszilloskop an den VIDEO OUT-Ausgang der Video-Platte anschließen und das Signal überprüfen.

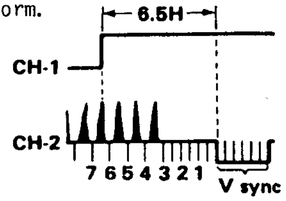
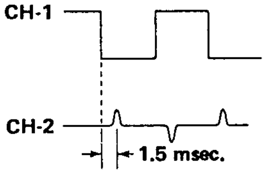
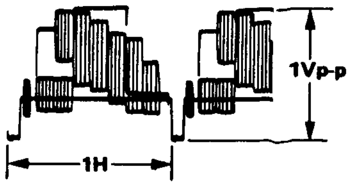
Amplitude des Synchronsignals ca. 0,3 V_{SS}
Amplitude des Videosignals ca. 0,7 V_{SS}
Amplitude des Farbburstsignals ca. 0,3 V_{SS}

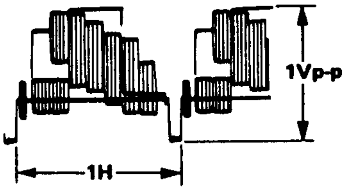
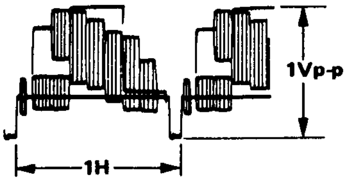
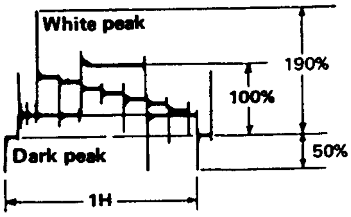
Because the RF signal is used for adjustment of circuits, it is important that the video output signal of the IF circuit satisfy the items shown in figure. Connect the colour bar signal generator to the ANT IN terminal. Connect the oscilloscope to the VIDEO OUTPUT terminal of the video circuit, and check the video output signal.

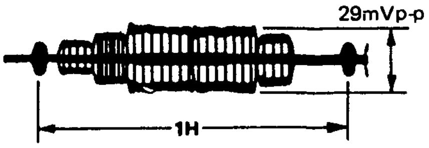
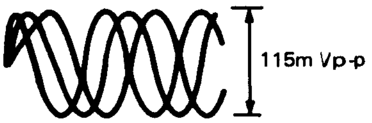
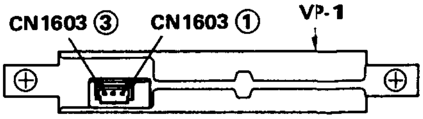
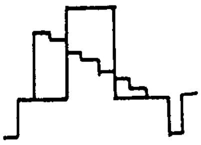
Amplitude of sync signal approx.: 0.3 V_{p-p}
Amplitude of video signal approx.: 0.7 V_{p-p}
Amplitude of colour burst signal: 0.3 V_{p-p}

SY-1 Servo-Platte
SY-1 Servo Board

Einstellung Adjustment	Betriebsart Mode	Meßpunkt Test point	Einstellpunkt Adjuster control	Einstellschritte Remarks
1. CH-1 Kopfumschaltimpuls	PLAY MH-2	TP 1001 (VIDEO OUT) CN 4008 (1) (-Trigger)	SVR 4001	Mit SVR 4001 auf 6,5 Zeilen vor dem Bildwechselimpuls einstellen.
1. CH-1 Switching position	PLAY MH-2	TP 1001 (VIDEO OUT) CN 4008 (1) (-trigger)	SVR 4001	Adjust SVR 4001 so that the phase of the leading edge of the vertical sync signal is delayed 6.5 H from the fall of the CH-1 waveform. 

Einstellung Adjustment	Betriebsart Mode	Meßpunkt Test point	Einstellpunkt Adjuster control	Einstellschritte Remarks
2. CH-2 Kopfumschaltimpuls	PLAY MH-2	TP 1001 (VIDEO OUT) CN 4008 (1) (+Trigger)	SVR 4002	Mit SVR 4002 auf 6,5 Zeilen vor dem Bildwechselimpuls einstellen.
2. CH-2 Switching position	PLAY MH-2	TP 1001 (VIDEO OUT) CN 4008 (1) (+trigger)	SVR 4002	Adjust SVR 4002 so that the phase of the leading edge of the vertical sync signal is delayed 6.5 H from the rise of the CH-1 waveform. 
3. Spurlage	REC→PLAY Farbbalken (Generator)	CN 4008 (4) CN 4001 (1) (trigger)	SVR 4003	1.Eigenaufnahme wiedergeben und den Trackingregler in Mittenposition stellen. 2. Mit SVR 4003 auf 1,5 msec ± 0,5 Verzögerung des CH-2 Signals gegenüber dem CH-1 Signal einstellen.
3. Tracking	REC→PLAY Colour bar (Generator)	CN 4008 (4) CN 4001 (1) (trigger)	SVR 4003	1. Playback the recorded portion, and set the tracking control to the center click position. 2. Adjust SVR 4003 so that the phase of the CH-2 waveform is 1.5 ± 0.5 msec after the fall of the CH-1 waveform. 
4. Standbild Vertikal-Zittern	REC PLAY STILL Farbbalken	Bildschirm	VR 4004	1. Eigenaufnahme wiedergeben und Recorder auf Standbild schalten. 2. Mit VR 4004 auf minimales Zittern einstellen.
4. STILL V-LOCK	REC PLAY STILL Colour bar	TV screen	VR 4004	1. Playback the recorded part, and put the VCR in the STILL mode. 2. Adjust VR 4004 so that the V jitter is minimized.
VD 1 Video-Platte **VD 1 Video Board**				
1 EE-Pegel	EE Farbbalkensignal (Generator)	TP 1001 (VIDEO OUTPUT)	SVR 1007	1. Mit SVR 1007 den Pegel auf 1,0 ± 0,05V_{ss} einstellen.
1. E-E level	E-E mode Colour bar (Generator)	TP 1001 (VIDEO OUTPUT)	SVR 1007	1. Adjust SVR 1007 so that the level is 1.0 ± 0.05 V_{p-p} 

Einstellung Adjustment	Betriebsart Mode	Meßpunkt Test point	Einstellpunkt Adjuster control	Einstellschritte Remarks
2. Wiedergabe-Pegel	PLAY MH-2 Testcassette (Farbbalken)	TP 1001 (VIDEO OUTPUT)	SVR 1006	1. Mit SVR 1006 den Pegel auf 1,0 ± 0,05 V_{ss} einstellen.
2. Playback level	PLAY MH-2 Alignment Tape (Colour bars)	TP 1001 (VIDEO OUTPUT)	SVR 1006	1. Adjust SVR 1006 so that the level is 1.0 ± 0.05 V_{p-p} 
3. Träger-Frequenz	E-E (kein Eingangssignal einspeisen)	TP 1006 (CN 1001) 6	SVR 1003	1. Eingangswahlschalter auf AUX umschalten und kein Signal in den Recorder einspeisen. 2. Mit SVR 1003 die Frequenz auf 3,8 ± 0,05 MHz einstellen.
3. Carrier Set	E-E (no input signal)	TP 1006 (CN 1001) 6	SVR 1003	1. Set the input select switch to the AUX position and put the VCR in the no signal E-E mode. 2. Adjust SVR 1003 so that the frequency is 3.8 ± 0.05 MHz.
4. Hub	REC (Einstellung) PB (Kontrolle)	TP 1001	SVR 1004	1. Die Eigenaufnahme wiedergeben und den Pegel von 1,0 ± 0,05 V_{ss} überprüfen. 2. Wird der Pegel nicht erreicht, mit SVR 1004 auf den entsprechenden Wert einstellen. Gegebenenfalls Aufnahme und Wiedergabe solange wiederholen bis der Wert richtig eingestellt ist.
4. Deviation	REC (Adjustment) PLAY (Check)	TP 1001	SVR 1004	1. Playback the recorded part, and check that the level is 1.0 ± 0.05 V_{p-p}. 2. If the level is not 1.0 ± 0.05 V_{p-p}, adjust SVR 1004, record and playback it until the value is satisfied. 
5. Schwarzwert & Weißwert	EE Farbbalken (Generator)	TP 1002 (IC 1001 pin 20)	SVR 1005 (schwarz) SVR 1002 (weiß)	1. Mit SVR 1005 den Schwarzwert auf 50% einstellen. 2. Mit SVR 1002 den Weißwert auf 190 % einstellen.
5. Dark Clip & White Clip	E-E Colourbar (Generator)	TP 1002	SVR 1005 (Dark Clip) SVR 1002 (White Clip)	1. Adjust SVR 1005 so that the dark peak is 50 %. 2. Adjust SVR 1002 so that the white peak is 190 % . 

Einstellung Adjustment	Betriebsart Mode	Meßpunkt Test point	Einstellpunkt Adjuster control	Einstellschritte Remarks
6. Chrominance Aufnahmestrom	REC Farbalken Generator)	CN 1603 (3) CN 1603 (1) (Masse)	SVR 1202	1. SVR 1001 auf rechts Anschlag drehen. (Von der Bauteileseite gesehen) 2. Mit SVR 1202 auf 29 ± 2 mVss einstellen.
6. Chrominance Signal Recording Current	REC Colour bar (Generator)	CN 1603 (3) CN 1603 (1) (GND)	SVR 1202	1. Turn SVR 1001 all the way to the right, looking from the parts side. 2. Adjust SVR 1202 so that the level is 29 ± 2 mVp-p. 
7. Y-Aufnahme-Pegel	REC schwarz/weiß Signal (Generator)	CN 1603 (3) CN 1603 (1) (Masse)	SVR 1001	Mit SVR 1001 auf einen Pegel von 115 ± 5 mV_{SS} einstellen.
7. Luminance Signal Recording Current	REC B/W signal (Generator)	CN 1603 (3) CN 1603 (1)	SVR 1001	Adjust SVR 1001 so that the level is 115 ± 5 mV_{p-p}.  
8. VXO	PLAY Unbespieltes Band	TP 1007	SVR 1201	Mit SVR 1201 die Frequenz auf 4433619 ± 20 Hz einstellen.
8. VXO	PLAY Blank Tape	TP 1007	SVR 1201	Adjust SVR 1201 so that the frequency is 4433619 ± 20 Hz.
9. CCD-Pegel	EE Farbbalken	TP 1003 (IC 1001 Pin 8) TP 1004 (IC 1001 Pin 9)	SVR 1121	Mit SVR 1121 an TP 1003 und 1004 denselben Pegel einstellen.
9. CCD-Pegel	EE Colour bar	TP 1003 (IC 1001	SVR 1121	Adjust SVR 1121 so that the level becomes equal at TP 1003 and 1004. 

VD-1 Audio-Platte
VD-1 Audio Board

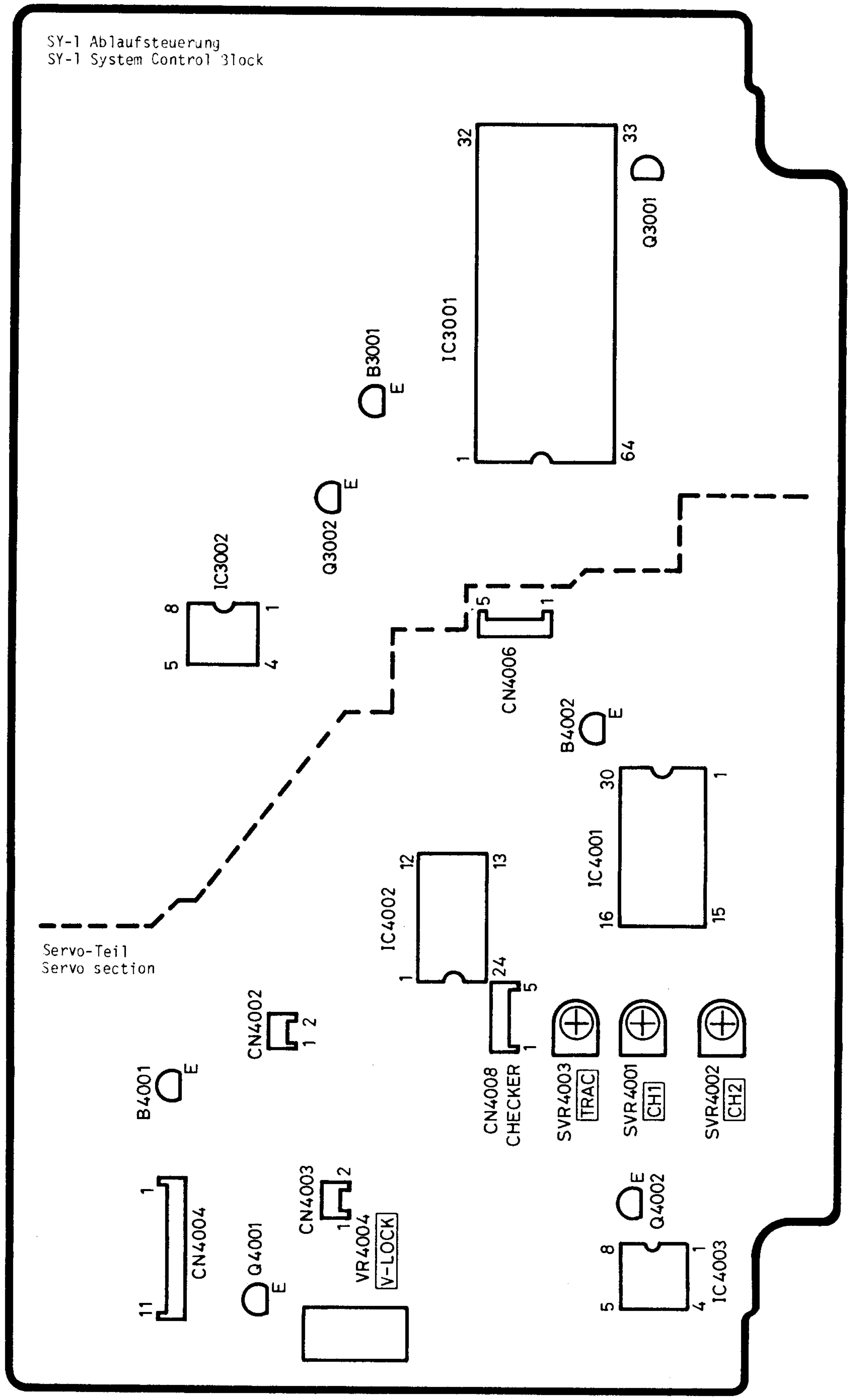
Einstellung Adjustment	Betriebsart Mode	Meßpunkt Test point	Einstellpunkt Adjuster control	Einstellschritte Remarks
1. BIAS	REC (ohne Eingangssignal)	TP 2004 TP 2005 (Masse)	SVR 2001	1. Den Recorder ohne Eingangssignal auf REC stellen. Dazu den Eingangswahlschalter auf AUX stellen. 2. Mit SVR 2001 den Pegel auf 24 mVeff einstellen.
1. BIAS	REC (no input signal)	TP 2004 TP 2005 (GND)	SVR 2001	1. Set the input select switch to the AUX position and put the VCR in the no signal mode 2. Adjsut SVR 2001 so that the level is 24 mVrms.
2. Wiedergabe Ausgangspegel	REC→PLAY Audiosignal (1 kHz, -3,8dB vom Audiosignalgenerator)	AUDIO-OUTPUT (AV-Buchse)	SVR 2002	SVR 2002 so einstellen, daß die aufgenommenen 1 kHz bei der Wiedergabe -3,8 dB ergeben.
2. Playback Output Level	REC→PLAY Audio signal (1 kHz, -3,8dB from Audio signal generator)	AUDIO-OUTPUT (AV-Socket)	SVR 2002	Adjust SVR 2002 so that the recorded 1 kHz output level becomes -3,8 dBs in the PLAY mode.

TN-1 Tuner/ZF-Platte
TN-1 Tuner/IF Board

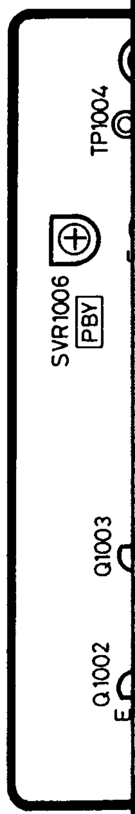
Einstellung Adjustment	Betriebsart Mode	Meßpunkt Test point	Einstellpunkt Adjuster control	Einstellschritte Remarks
1. AGC	EE (Fernseh-Testbild)	Bildschirm	SVR 5001	1. AFC-Schalter ein. 2. Regler SVR 5001, von der Bauteileseite aus gesehen, auf Rechtsanschlag stellen. 3. Bildschirm beobachten und den Regler SVR 6001 langsam nach links drehen bis das geringste Rauschen erreicht ist.
1. RF AGC	E-E TV broadcast	TV screen	SVR 6001	1. Set the AFT switch to ON position. 2. Turn SVR 5001 all the way to the right, looking from the parts side. 3. While watching the TV screen, turn SVR 6001 slowly to the left and adjust it to the point where S/N is best point.

Test-Punkte & Abgleich-Lageplan
Test Point & Adjustment Location

SY-1 Platte
SY-1 Board


SY-1 Ablaufsteuerung
SY-1 System Control Block
IC3001
32
33
1
64
Q3001
B3001
E
Q3002
E
IC3002
8
1
5
4
CN4006
5
1
B4002
E
IC4001
30
1
16
15
IC4002
12
13
1
24
CN4008
CHECKER
5
1
SVR4003
TRAC
SVR4001
CH1
SVR4002
CH2
Servo-Teil
Servo section
CN4002
1
2
B4001
E
CN4004
1
11
Q4001
E
CN4003
1
2
VR4004
V-LOCK
Q4002
E
IC4003
8
1
5
4

VD-1 Platt
VD-1 Boa


TP1004
SVR1006
PBY
Q1003
Q1002
E

ingangssignal auf REC
gangswahlschalter auf

egel auf 24 mVeff ein-

ct switch to the AUX
/CR in the no signal mode
that the level is

---

n, daß die aufgenommenen
abe -3,8 dB ergeben.

at the recorded 1 kHz
-3,8 dBs in the PLAY

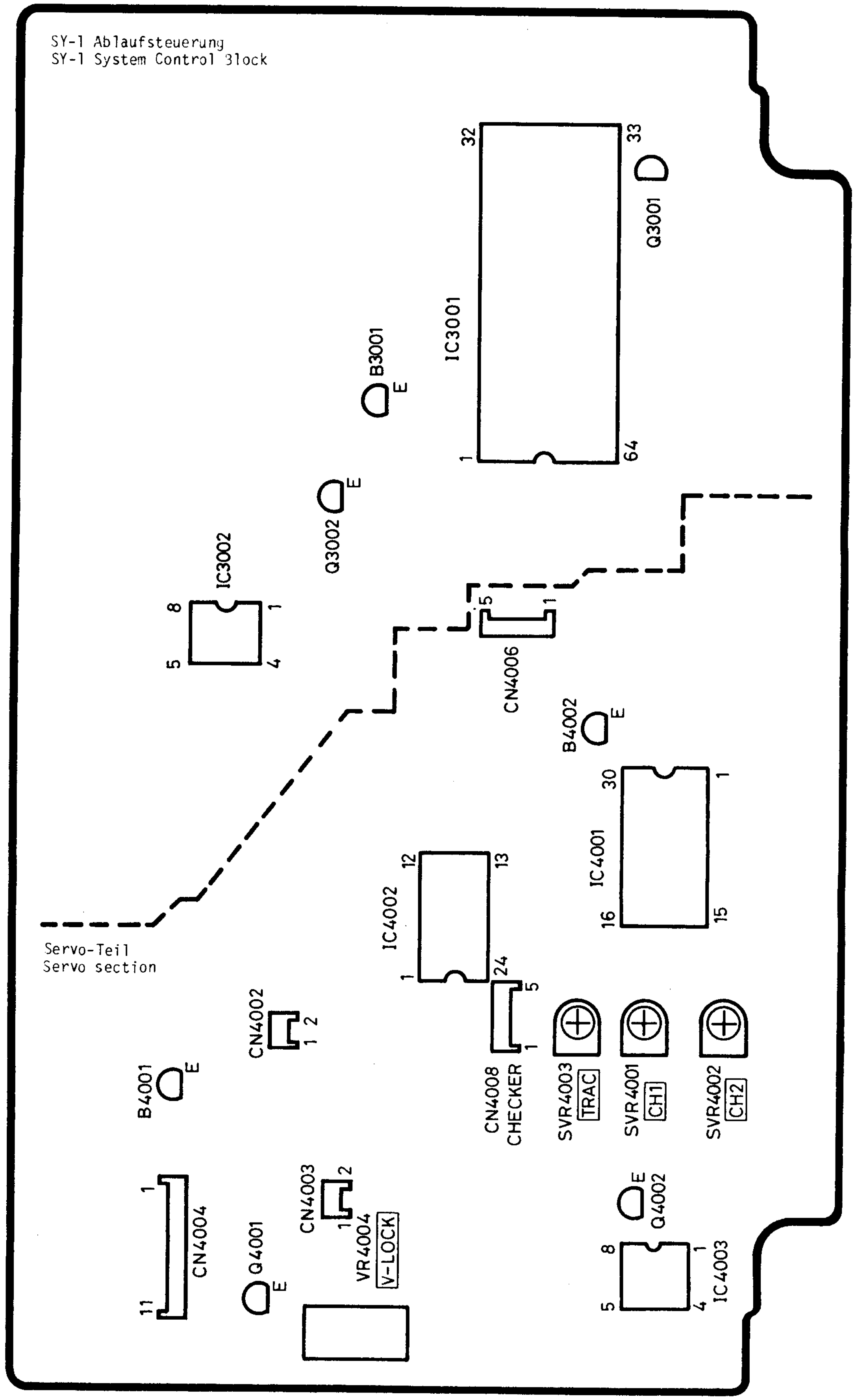
---

n der Bauteileseite aus
hlag stellen.
en und den Regler SVR
s drehen bis das
eicht ist.

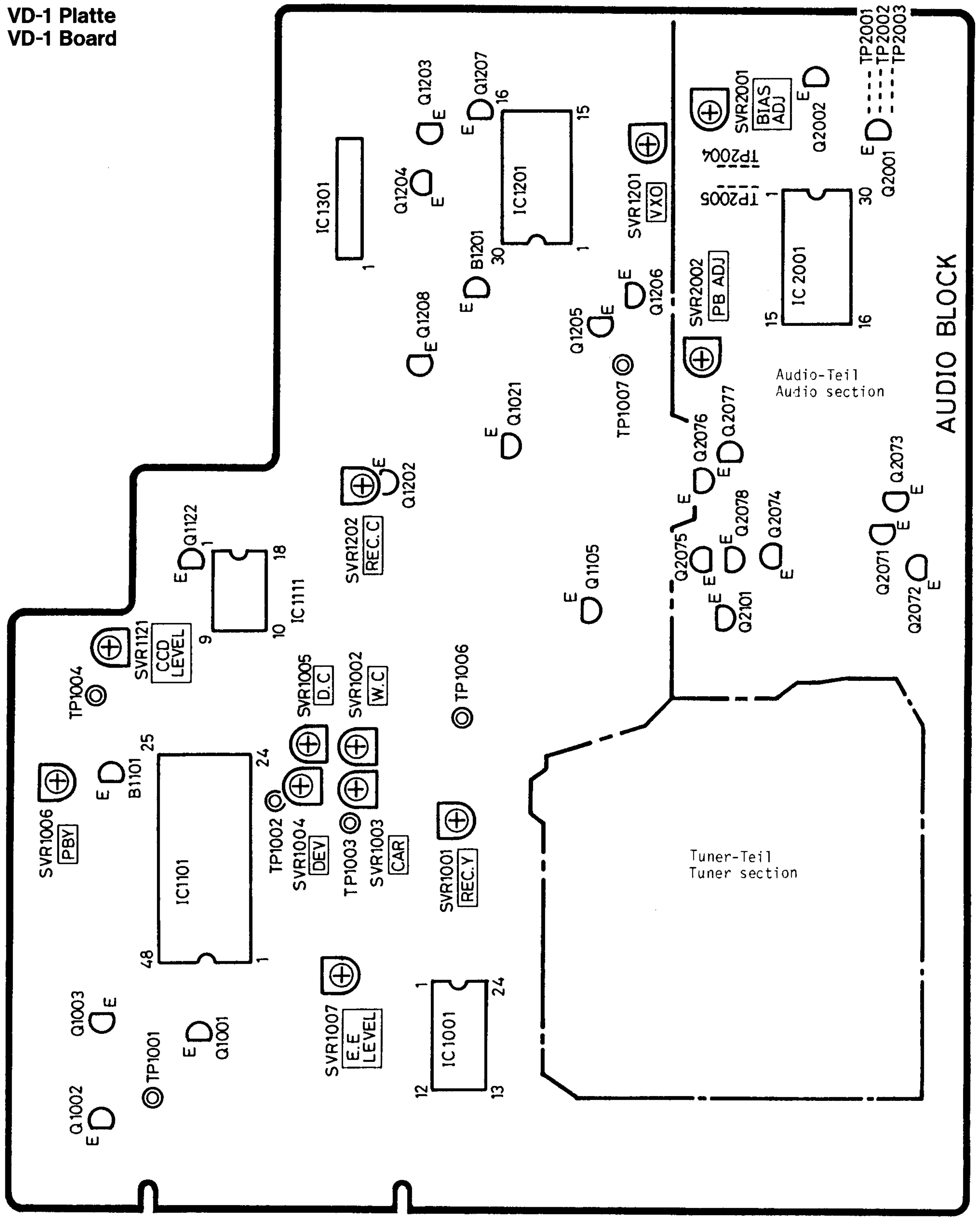
o ON position.
e way to the right,
side.
V screen, turn SVR
and adjust it to the
point.

Test-Punkte & Abgleich-Lageplan
Test Point & Adjustment Location

SY-1 Platte
SY-1 Board


SY-1 Ablaufsteuerung
SY-1 System Control Block
IC3001
Q3001
B3001
Q3002
IC3002
CN4006
B4002
IC4001
IC4002
Servo-Teil
Servo section
CN4002
CN4008
CHECKER
SVR4003
TRAC
SVR4001
CH1
SVR4002
CH2
B4001
CN4004
Q4001
CN4003
VR4004
V-LOCK
Q4002
IC4003
E

VD-1 Platte
VD-1 Board


TP2001
TP2002
TP2003
SVR2001
BIAS ADJ
Q2002
Q2001
TP2004
TP2005
IC2001
SVR1201
VXO
SVR2002
PB ADJ
IC1301
Q1204
Q1203
Q1207
IC1201
B1201
Q1208
Q1206
Q1205
TP1007
Q1021
Audio-Teil
Audio section
AUDIO BLOCK
Q2076
Q2077
Q2075
Q2078
Q2074
Q2073
Q2071
Q2072
Q2101
Q1105
SVR1202
REC.C
Q1202
Q1122
IC1111
SVR1121
CCD LEVEL
TP1004
SVR1005
D.C
SVR1002
W.C
TP1006
SVR1006
PBY
B1101
IC1101
TP1002
SVR1004
DEV
TP1003
SVR1003
CAR
SVR1001
REC.Y
Tuner-Teil
Tuner section
Q1003
Q1001
TP1001
SVR1007
E.E LEVEL
IC1001
Q1002
E